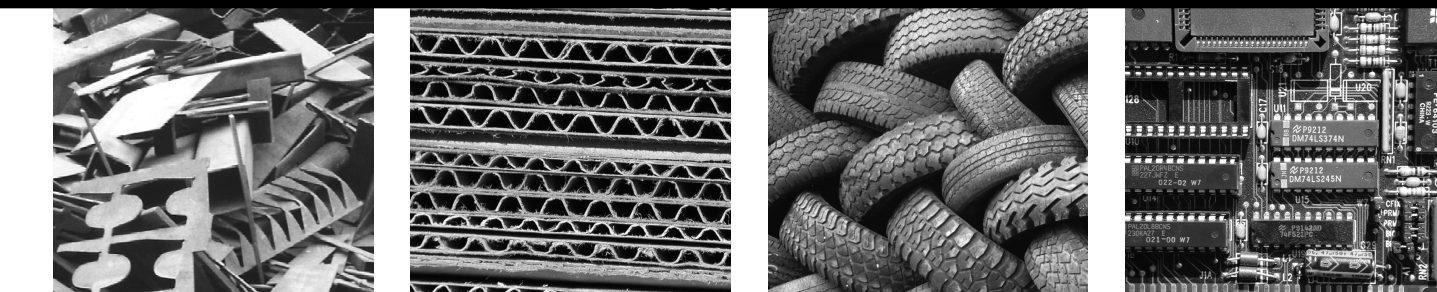


SCRAP SPECIFICATIONS CIRCULAR



2018

**GUIDELINES FOR NONFERROUS SCRAP • FERROUS SCRAP • GLASS CULLET
PAPER STOCK • PLASTIC SCRAP • ELECTRONICS SCRAP • TIRE SCRAP**

EFFECTIVE 4/16/2018

Copyright © 2018 Institute of Scrap Recycling Industries, Inc.



**Institute of
Scrap Recycling
Industries, Inc.**

Scrap Specifications Circular 2018

Rules Governing the Procedures for the Addition, Amendment, or Withdrawal of Specifications.....	3
Guidelines for Nonferrous Scrap: NF-2018.....	4
Red Metals	4
Aluminum.....	7
Zinc	11
Magnesium	12
Lead.....	12
Nickel/Stainless/Hi Temp.....	13
Mixed Metals	14
Other	15
Guidelines for Ferrous Scrap: FS-2018	17
Electric Furnace Casting and Foundry Grades	18
Specially Processed Grades	20
Cast Iron Grades	20
Special Boring Grades	20
Steel From Scrap Tires.....	20
Railroad Ferrous Scrap	21
Guidelines for Glass Cullet: GC-2018	23
MRF Glass	25
Guidelines for Paper Stock: PS-2018.....	26
Glossary of Paper Stock Terms.....	32
Guidelines for Plastic Scrap: P-2018	33
Guidelines for Electronics Scrap: ES-2018.....	44
Guidelines for Tire Scrap TS-2018.....	48
Guidelines for Metals Transactions	49
Guidelines for Inbound Curbside Recyclables for MRFs	54
ISRI Arbitration Service	60

Guidelines for
Nonferrous Scrap
Ferrous Scrap
Glass Cullet
Paper Stock
Plastic Scrap
Electronics Scrap
Tire Scrap

EFFECTIVE 4/16/2018



Voice of the Recycling Industry™

Institute of
Scrap Recycling
Industries, Inc.

1250 H St. NW, Suite 400
Washington, DC 20005-5903
Tel. 202/662-8500
Fax 202/624-9256
isri.org

PREFACE

The standard specifications included in this Circular are intended to assist members in the buying and selling of their materials and products.

These specifications are derived from many sectors of the metals, paper stock, plastics, glass, and electronics industries and are constructed to represent the quality or composition of the materials bought and sold in the industry. The specifications are internationally accepted and are used throughout the world to trade the various commodities.

Parties to a transaction may specify particular variations or additions to these specifications as are suited for their specific transactions and for their individual convenience. Any deviation from the standard specifications, however, should be mutually agreed to and so stipulated in writing by the parties to the transactions.

ISRI maintains an Arbitration Service as a means of enabling members to settle differences between themselves or between one of them and a non-member.

In addition, the "Guidelines for Metals Transactions" contain supplementary information that will aid members in completing their business transactions. It is recommended that these Guidelines be reviewed and that members use them in conjunction with the actual specifications in the conduct of their business.

ISRI's *Scrap Specifications Circular* is posted in PDF format at least once per year on the ISRI web site. To ensure you have the most up-to-date version, visit isri.org/specs.

Issued by:



Copyright © 2018 Institute of Scrap Recycling Industries, Inc.

This document may not be reprinted in whole or in part without the prior written permission of the Institute of Scrap Recycling Industries, Inc.

CIRCULAR 2018 BECAME EFFECTIVE APRIL 16, 2018,
AND PREVAILS UNTIL SUPERSEDED.

Rules Governing the Procedures for the Addition, Amendment, or Withdrawal of Scrap Specifications

- 1.0 *Initiation of Request.* Any person may file a request to add, amend or withdraw a specification by submitting such request in writing to the ISRI President.
- 1.1 The President shall refer such request to the Chair of the appropriate Division Specifications Committee (the "Committee"), with copies to:
 - A. ISRI's Officers;
 - B. The Chair of any ISRI Division and/or Committee that might be affected by the specification.
- 2.0 *Committee Action.* Following presentation by all interested parties, the Committee shall review the request and:
 - A. Act upon it prior to the next meeting of the Board, as set forth in Section 2.1; or
 - B. Refer it to a subcommittee for review and recommendation for action by the full Committee at its next meeting.
- 2.1 The Committee shall summarize the positions advocated by the various parties interested in the request and recommend to the appropriate division and the Board of Directors what action should be taken.
- 3.0 *Notice.* A notice of the Committee recommendations shall be distributed to all ISRI members, a news release will be distributed to industry trade publications and a notice will be posted on the ISRI website at least twenty days before the request will be considered by the Board of Directors. Such notice shall state:
 - A. The date, time and place at which the request will be considered by the Board;
 - B. That the proceeding at which the request will be considered shall be open to the public;
 - C. That interested parties may participate in the proceeding by personal appearance or by submitting written comments;
 - D. A summary of the specification and the matter to be considered at the meeting.
- 4.0 *Board of Directors Action.* The Board of Directors, at its meeting at which the report and recommendation of the Committee has been made, may adopt, amend or reject the recommendation or table it pending further review and recommendation by the Committee.
- 4.1 Notice of the action taken by the Board shall be given to all interested parties who actively participated in the Committee proceeding and any other persons who have requested in writing notice of the Board's action. Notice of said action also shall be distributed to all ISRI members, a news release will be distributed to industry trade publications and a notice will be posted on the ISRI website on or before ten days following the Board's action.
- 5.0 *Appeal.* On or before thirty days after the date of the notice required in Section 6.1, any party may appeal the decision of the Board by written notice to the President. Said appeal shall state the reasons for the appeal and the requested action to be taken. Notice of said appeal shall be given in accordance with Section 1.0.
- 5.1 The appeal shall be heard by the Board at its next meeting following receipt of the appeal.
- 5.2 The appellant and all interested parties shall be given at least twenty days notice of the date, time and place of the hearing, and like notice shall be inserted in the ISRI newsletter at least twenty days prior to the hearing.
- 5.3 At the hearing, the appellant and any other interested party may appear either in person or by written presentation and state their reasons for the appeal.
- 5.4 The Board, following said hearing, shall review and act upon the appeal. Notice of the Board's action shall be given in accordance with Section 4.1.
- 6.0 *Records.* ISRI shall maintain for not less than five years following the date of termination of the proceedings, records of the original request, summaries of the deliberations and recommendations of the Committee, action of the Board, summaries of the appeal and final decision, if any, of the Board, together with the positions of interested parties, copies of notices sent to interested parties and inserted in the ISRI newsletter and national trade publications, written statements, and the reasons for recommendation and final action by the Committee and the Board.
- 6.1 Said records shall be available for review by the public upon reasonable notice.

Guidelines for Nonferrous Scrap: NF-2018

Note: When the individual scrap grades in this Circular, denoted by the various code words, are used, an agreement between parties is also bound by the terms of "Apple" as it appears below, unless the terms and conditions of a specific contract provide otherwise, in which case the specific contractual provisions shall govern.

CODE ITEM

Apple Nonferrous Terms

- a. Delivery of more or less of the specified quantity up to 3 percent is permissible.
- b. A ton shall be understood to be 2,000 pounds, unless otherwise specified.
- c. If any portion of the goods covered by a contract are unshipped or undelivered within the time specified in a contract, then that portion is subject to cancellation by the buyer and/or the buyer has the right to hold the seller responsible for substantiated damages.
If, because of embargo and/or other conditions of force majeure, a delivery or shipment cannot be made by the time specified, the contract shall remain valid and shall be completed promptly upon lifting of the embargo and/or conditions of force majeure and the terms of said contract shall not be changed.
- d. If for any portion of a contract the buyer fails in a timely manner to open a Letter of Credit and/or fails to provide proper conveyance and/or shipping instructions as specified in the contract, then that portion is subject to cancellation by the seller and/or the seller has the right to hold the buyer responsible for substantiated damages.
If, because of embargo and/or other conditions of force majeure, a delivery or shipment cannot be made by the time specified, the contract shall remain valid and shall be completed promptly upon lifting of the embargo and/or conditions of force majeure and the terms of said contract shall not be changed.
- e. If a significant weight or quality difference is apparent, the seller should be notified promptly and, if requested, another weight or quality determination should be taken. Seller and/or buyer should be given the opportunity to appoint an independent surveyor or a representative to verify weights and/or quality.
For purposes of this section, the meaning of the word "significant" shall be determined by agreement between buyer and seller, depending on the commodities and their values.
- f. If it is mutually determined that goods delivered do not conform to the description specified in the contract, then the shipment is subject to rejection or downgrade.
Disposition of, replacement of, and/or financial adjustment for rejected material shall be subjected to mutual agreement between buyer and seller. Seller is responsible for freight costs.
Buyer is expected, however, to exert every effort to limit rejections only to that portion of the ship-

CODE ITEM

ment which is unsortable and to return the rejected portion promptly upon request, if government regulations permit.

RED METALS

HEAVIER PIECES OF ANY SIZE, LENGTH, AND WEIGHT ACCEPTABLE UPON MUTUAL AGREEMENT BETWEEN BUYER AND SELLER.

Barley No. 1 COPPER WIRE

Shall consist of No. 1 bare, uncoated, unalloyed copper wire, commonly known as Bare Bright copper wire. Wire gauge subject to agreement between buyer and seller. Green copper wire and hydraulically compacted material to be subject to agreement between buyer and seller.

Berry No. 1 COPPER WIRE

Shall consist of clean, untinned, uncoated, unalloyed copper wire and cable, free of brittle burnt wire. Wire gauge subject to agreement between buyer and seller. Free of copper tubing. Hydraulically briquetted copper subject to agreement.

Birch No. 2 COPPER WIRE

Shall consist of miscellaneous, unalloyed copper wire having a nominal 96% copper content (minimum 94%) as determined by electrolytic assay. Should be free of the following: Excessively leaded, tinned, soldered copper wire; brass and bronze wire; excessive oil content, iron, and non-metallics; copper wire from burning; insulation; hair wire; brittle burnt wire; and should be reasonably free of ash. Hydraulically briquetted copper subject to agreement.

Candy No. 1 HEAVY COPPER SOLIDS AND TUBING

Shall consist of clean, unalloyed, uncoated copper clippings, punchings, bus bars, commutator segments, and clean copper tubing. Hydraulically briquetted copper subject to agreement.

Berry/Candy Candy/Berry

A combination of copper wire and heavy copper as defined in Berry and Candy. See above.

Cliff No. 2 COPPER SOLIDS AND TUBING

Shall consist of miscellaneous, unalloyed copper scrap having a nominal 96% copper content (minimum 94%) as determined by electrolytic assay. Should be free of the following: Excessively leaded, tinned, soldered copper scrap; brasses and bronzes; excessive oil content, iron and non-metallics; copper tubing with other than copper connections or with sediment; copper wire from burning; insulation; hair wire; brittle burnt wire; and should be reasonably free of ash. Hydraulically briquetted copper subject to agreement.

CODE ITEM

Birch/Cliff

A combination of No. 2 copper wire and copper as defined in Birch and Cliff. See above.

Clove No. 1 COPPER WIRE NODULES

Shall consist of No. 1 bare, uncoated, unalloyed copper wire scrap nodules, chopped or shredded, free of tin, lead, zinc, aluminum, iron, other metallic impurities, insulation, and other foreign contamination. Minimum copper 99%. Gauge smaller than No. 16 B & S wire and hydraulically compacted material subject to agreement between buyer and seller.

Cobra No. 2 COPPER WIRE NODULES

Shall consist of No. 2 unalloyed copper wire scrap nodules, chopped or shredded, minimum 97% copper. Maximum metal impurities not to exceed 0.50% aluminum and 1% each of other metals or insulation. Hydraulically compacted material subject to agreement between buyer and seller.

Cocoa COPPER WIRE NODULES

Shall consist of unalloyed copper wire scrap nodules, chopped or shredded, minimum 99% copper. Shall be free of excessive insulation and other non-metallics. Maximum metal impurities as follows:

Aluminum	.05%	Antimony	.01%
Tin	.25%	Iron	.05%
Nickel	.05%		

Hydraulically compacted material subject to agreement between buyer and seller.

Dream LIGHT COPPER

Shall consist of miscellaneous, unalloyed copper scrap having a nominal 92% copper content (minimum 88%) as determined by electrolytic assay and shall consist of sheet copper, gutters, downspouts, kettles, boilers, and similar scrap. Should be free of the following: Burnt hair wire; copper clad; plating racks; grindings; copper wire from burning, containing insulation; radiators and fire extinguishers; refrigerator units; electrotype shells; screening; excessively leaded, tinned, soldered scrap; brasses and bronzes; excessive oil, iron and non-metallics; and should be reasonably free of ash. Hydraulically briquetted copper subject to agreement. Any items excluded in this grade are also excluded in the higher grades above.

Drink REFINERY BRASS

Shall contain a minimum of 61.3% copper and maximum 5% iron and to consist of brass and bronze solids and turnings, and alloyed and contaminated copper scrap. Shall be free of insulated wire, grindings, electrotype shells and non-metallics. Hydraulically briquetted material subject to agreement.

Droid INSULATED COPPER WIRE SCRAP

Shall consist of No. 2 copper wire (see Birch) with various types of insulation. To be sold on a sample or recovery basis, subject to agreement between buyer and seller. Existence of jelly wire subject to agreement between buyer and seller.

CODE ITEM

Drove COPPER-BEARING SCRAP

Shall consist of miscellaneous copper-containing skimmings, grindings, ashes, iron brass and copper, residues and slags. Shall be free of insulated wires; copper chlorides; unprepared tangled material; large motors; pyrophoric material; asbestos brake linings; furnace bottoms; high lead materials; graphite crucibles; and noxious and explosive materials. Fine powdered material by agreement. Hydraulically briquetted material subject to agreement.

Druid INSULATED COPPER WIRE SCRAP

Shall consist of No. 1 bare, uncoated, unalloyed copper wire (see Barley), not smaller than No. 16 B & S wire gauge (unless smaller wire gauge is mutually agreed upon), with various types of insulation. To be sold on sample or recovery basis, subject to agreement between buyer and seller.

Ebony COMPOSITION OR RED BRASS

Shall consist of red brass scrap, valves, machinery bearings and other machinery parts, including miscellaneous castings made of copper, tin, zinc, and/or lead. Shall be free of semi-red brass castings (78% to 81% copper); railroad car boxes and other similar high-lead alloys; cocks and faucets; closed water meters; gates; pot pieces; ingots and burned brass; aluminum, silicon, and manganese bronzes; iron and non-metallics. No piece to measure more than 12" over any one part or weigh over 100 lbs. Heavier pieces acceptable upon mutual agreement between buyer and seller.

Ebulent LEAD-FREE BISMUTH BRASS SOLIDS

Shall consist of scrap castings alloyed with copper, tin, bismuth, and zinc. Castings shall be free of leaded brass attachments and have less than 0.2% alloyed lead or as agreed between buyer and seller. Examples that meet this specification include, but are not limited to, CDA 89833/35/36/37/41/42 and 45.

Ecstatic LEAD-FREE BISMUTH BRASS TURNINGS

Shall consist of scrap borings and turnings alloyed with copper, tin, bismuth, and zinc. Turnings shall be unmixed and have less than 0.2% alloyed lead or as agreed between buyer and seller. Examples that meet this specification include, but are not limited to, CDA 89833/35/36/37/41/42 and 45.

Eland HIGH GRADE-LOW LEAD BRONZE/BRASS SOLIDS

It is recommended these materials be sold by analysis.

Elder GENUINE BABBITT-LINED BRASS BUSHINGS

Shall consist of red brass bushings and bearings from automobiles and other machinery, shall contain not less than 12% high tin-base babbitt, and shall be free of iron-backed bearings.

Elias HIGH LEAD BRONZE SOLIDS AND BORINGS

It is recommended that these materials be sold on sample or analysis.

Enerv RED BRASS COMPOSITION TURNINGS

Shall consist of turnings from red brass composition material and should be sold subject to sample or analysis.

CODE	ITEM	CODE	ITEM
Engel	MACHINERY OR HARD BRASS SOLIDS Shall have a copper content of not less than 75%, a tin content of not less than 6%, and a lead content of not less than 6% nor more than 11%, and total impurities, exclusive of zinc, antimony, and nickel of not more than 0.75%; the antimony content not to exceed 0.50%. Shall be free of lined and unlined standard red car boxes.	Lady	BRASS SHELL CASES WITH PRIMERS Shall consist of clean fired 70/30 brass shell cases containing the brass primers, and containing no other foreign material. For material to be exported from the United States, all shells must be sufficiently mutilated to prevent reuse and reloading.
Erin	MACHINERY OR HARD BRASS BORINGS Shall have a copper content of not less than 75%, a tin content of not less than 6%, and a lead content of not less than 6% nor more than 11%, and the total impurities, exclusive of zinc, antimony, and nickel of not more than 0.75%; the antimony content not to exceed 0.50%.	Lake	BRASS SMALL ARMS AND RIFLE SHELLS, CLEAN FIRED Shall consist of clean fired 70/30 brass shells free of bullets, iron and any other foreign material. For material to be exported from the United States, all shells must be sufficiently mutilated to prevent reuse and reloading.
Fence	UNLINED STANDARD RED CAR BOXES (CLEAN JOURNALS) Shall consist of standard unlined and/or sweated railroad boxes and unlined and/or sweated car journal bearings, free of yellow boxes and iron-backed boxes.	Lamb	BRASS SMALL ARMS AND RIFLE SHELLS, CLEAN MUFFLED (POPPED) Shall consist of clean muffled (popped) 70/30 brass shells free of bullets, iron and any other foreign material. For material to be exported from the United States, all shells must be sufficiently mutilated to prevent reuse and reloading.
Ferry	LINED STANDARD RED CAR BOXES (LINED JOURNALS) Shall consist of standard babbitt-lined railroad boxes and/or babbitt-lined car journal bearings, free of yellow boxes and iron-backed boxes.	Lark	YELLOW BRASS PRIMER Shall consist of clean yellow brass primers, burnt or unburnt. Shall be free of iron, excessive dirt, corrosion and any other foreign material.
Grape	COCKS AND FAUCETS Shall consist of mixed clean red and yellow brass, including chrome or nickel-plated, free of gas cocks, beer faucets, and aluminum and zinc base die cast material, and to contain a minimum of 35% semi-red.	Maize	MIXED NEW NICKEL SILVER CLIPPINGS Shall consist of one or more nickel silver alloys and the range of nickel content to be specified, free of chrome or any other plating material. Leaded nickel silver clippings should be packed and sold separately. Not to contain more than 10% of clean punchings under 1/4 inch.
Honey	YELLOW BRASS SCRAP Shall consist of mixed yellow brass solids, including brass castings, rolled brass, rod brass, tubing and miscellaneous yellow brasses, including plated brass. Must be free of manganese-bronze, aluminum-bronze, unsweated radiators or radiator parts, iron, and excessively dirty and corroded materials. Must also be free of any type of munitions including, but not limited to, bullet casings.	Major	NEW NICKEL SILVER CLIPPINGS AND SOLIDS Shall consist of new, clean nickel silver clippings, plate, rod and forgings, and other rolled shapes, free of chrome or any other plating material. Must be sold on nickel content specifications such as 10%-12%-15%-18%-20%. Leaded nickel silver clippings should be packed and sold separately. A description as to its physical characteristics should be made in offering all nickel silver material.
Ivory	YELLOW BRASS CASTINGS Shall consist of yellow brass castings in crucible shape, no piece to measure more than 12 inches over any one part; and shall be free of brass forgings, silicon bronze, aluminum bronze and manganese bronze, and not to contain more than 15% nickel plated material.	Malar	NEW SEGREGATED NICKEL SILVER CLIPPINGS Shall consist of one specified nickel silver alloy. Not to contain more than 10% of clean punchings under 1/4 inch.
Label	NEW BRASS CLIPPINGS Shall consist of the cuttings of new unleaded yellow brass sheet or plate, to be clean and free from foreign substances and not to contain more than 10% of clean brass punchings under 1/4 inch. To be free of Muntz metal and naval brass.	Malic	OLD NICKEL SILVER Shall consist of old nickel silver sheet, pipe, rod, tubes, wire, screen, soldered or unsoldered. Must not be trimmed seams alone, and must also be free of foreign substances, iron rimmed material and other metals.
Lace	BRASS SHELL CASES WITHOUT PRIMERS Shall consist of clean fired 70/30 brass shell cases free of primers and any other foreign material. For material to be exported from the United States, all shells must be sufficiently mutilated to prevent reuse and reloading.	Melon	BRASS PIPE Shall consist of brass pipe free of plated and soldered materials or pipes with cast brass connections. To be sound, clean pipes free of sediment and condenser tubes.
		Naggy	NICKEL SILVER CASTINGS To be packed and sold separately.

CODE ITEM

Niece NICKEL SILVER TURNINGS

To be sold by sample or analysis.

Nascent LEADED BRASS SCRAP TURNINGS

Shall consist of scrap borings and turnings alloyed with copper, zinc, and lead. Turnings shall be unmixed and have less than 0.01% alloyed bismuth and silicon each and other impurities as agreed between buyer and seller.

Niche LEADED BRASS SCRAP ROD ENDS AND FORGINGS

Shall consist of scrap rod ends and forgings alloyed with copper, zinc, and lead. Solids shall have less than 0.01% alloyed bismuth and silicon each and other impurities as agreed between buyer and seller.

Night YELLOW BRASS ROD TURNINGS

Shall consist strictly of rod turnings, free of aluminum, manganese, composition, Tobin and Muntz metal turnings; not to contain over 3% free iron, oil or other moisture; to be free of grindings and babbits; to contain not more than 0.30% tin and not more than 0.15% alloyed iron.

Noble NEW YELLOW BRASS ROD ENDS

Shall consist of new, clean rod ends from free turning brass rods or forging rods, not to contain more than 0.30% tin and not more than 0.15% alloyed iron. To be free of Muntz metal and naval brass or any other alloys. To be in pieces not larger than 12" and free of foreign matter.

Nomad YELLOW BRASS TURNINGS

Shall consist of yellow brass turnings, free of aluminum, manganese and composition turnings, not to contain over 3% of free iron, oil or other moisture; to be free of grindings and babbits. To avoid dispute, to be sold subject to sample or analysis.

Ocean MIXED UNSWEATED AUTO RADIATORS

Shall consist of mixed automobile radiators, to be free of aluminum radiators, and iron-finned radiators. All radiators to be subject to deduction of actual iron. The tonnage specification should cover the gross weight of the radiators, unless otherwise specified.

Pales BRASS CONDENSER TUBES

Shall consist of clean condenser tubing which may be plated or unplated, free of excessive corroded material as mutually agreed. Upon mutual agreement between buyer and seller, may be in the form of whole bundles including iron and/or brass heads as well as iron and/or brass baffles.

Pallu ALUMINUM BRASS CONDENSER TUBES

Shall consist of clean sound condenser tubing which may be plated or unplated, free of nickel alloy and corroded material.

Palms MUNTZ METAL TUBES

Shall consist of clean sound Muntz metal tubing which may be plated or unplated, free of nickel alloy, aluminum alloy, and corroded material.

CODE ITEM

Parch MANGANESE BRONZE SOLIDS

Shall have a copper content of not less than 55%, a lead content of not more than 1%, and shall be free of aluminum bronze and silicon bronze.

ALUMINUM**HEAVIER PIECES OF ANY SIZE, LENGTH, AND WEIGHT ACCEPTABLE UPON MUTUAL AGREEMENT BETWEEN BUYER AND SELLER.****Tablet CLEAN ALUMINUM LITHOGRAPHIC SHEETS**

To consist of 1000 and/or 3000 series alloys, to be free of paper, plastic, excessively inked sheets, and any other contaminants. Minimum size of 3" (8 cm) in any direction.

Tabloid NEW, CLEAN ALUMINUM LITHOGRAPHIC SHEETS

To consist of 1000 and/or 3000 series alloys, uncoated, unpainted, to be free of paper, plastic, ink, and any other contaminants. Minimum size of 3" (8 cm) in any direction.

Taboo MIXED LOW COPPER ALUMINUM CLIPPINGS AND SOLIDS

Shall consist of new, clean, uncoated and unpainted low copper aluminum scrap of two or more alloys with a minimum thickness of 0.015 inches (.38 mm) and to be free of 2000 and 7000 series, hair wire, wire screen, punchings less 1/2 inch (1.25 cm) diameter, dirt, and other non-metallic items. Grease and oil not to total more than 1%. Variations to this specification should be agreed upon prior to shipment between the buyer and seller.

Taint/Tabor CLEAN MIXED OLD ALLOY SHEET ALUMINUM

Shall consist of clean old alloy aluminum sheet of two or more alloys, free of foil, venetian blinds, castings, hair wire, screen wire, food or beverage containers, radiator shells, airplane sheet, bottle caps, plastic, dirt, and other non-metallic items. Oil and grease not to total more than 1%. Up to 10% Tale permitted.

Take NEW ALUMINUM CAN STOCK

Shall consist of new low copper aluminum can stock and clippings, clean, lithographed or not lithographed, and coated with clear lacquer but free of lids with sealers, iron, dirt and other foreign contamination. Oil not to exceed 1%.

Talc POST-CONSUMER ALUMINUM CAN SCRAP

Shall consist of old aluminum food and/or beverage cans. The material is to be free of other scrap metals, foil, tin cans, plastic bottles, paper, glass, and other non-metallic items. Variations to this specification should be agreed upon prior to shipment between the buyer and seller.

CODE	ITEM	CODE	ITEM
Talcred	<p>SHREDDED ALUMINUM USED BEVERAGE CAN (UBC) SCRAP Shall have a density of 12 to 17 pounds per cubic foot (193 to 273 kg/m³). Material should contain maximum 5% fines less than 4 mesh (U.S. standard screen size) (6.35 mm). Must be magnetically separated material and free of steel, lead, bottle caps, plastic cans and other plastics, glass, wood, dirt, grease, trash, and other foreign substances. Any free lead is basis for rejection. Any and all aluminum items, other than used beverage cans, are not acceptable. Variations to this specification should be agreed upon prior to shipment between the seller and buyer.</p>	Taldork	<p>BRIQUETUED ALUMINUM USED BEVERAGE CAN (UBC) SCRAP Shall have a briquette density of 50 pounds per cubic foot (800 kg/m³) minimum. Nominal briquette size shall range from 12" to 24" (30.5 x 61 cm) x 12" to 24" (30.5 x 61 cm) in uniform profile with a variable length of 8" (20.3 cm) minimum and 48" (122 cm) maximum. Briquettes shall be bundled or stacked on skids and secured with a minimum of one vertical band per row and a minimum of one girth band per horizontal layer. Briquettes not to overhang pallet. Total package height shall be 48 (122 cm) maximum. Banding shall be at least 5/8" (1.6 cm) wide by .020" (5 mm) thick steel strapping or equivalent strength. The weight of any bundle shall not exceed 4,000 pounds (1.814 mt). Material must be magnetically separated and free of steel, plastic, glass, dirt and all other foreign substances. Any and all aluminum items other than UBC are unacceptable. Any free lead is basis for rejection. Items not covered in the specification, including moisture, and any variations to this specification should be agreed upon prior to shipment between the buyer and seller.</p>
Taldack	<p>DENSIFIED ALUMINUM USED BEVERAGE CAN (UBC) SCRAP Shall have a biscuit density of 35 to 50 pounds per cubic foot (562 to 802 kg/m³). Each biscuit not to exceed 60 pounds (27.2 kg). Nominal biscuit size range from 10" to 13" x 10 1/4" (25.4 x 33 x 26 cm) to 20" x 6 1/4" x 9" (50.8 x 15.9 x 22.9 cm). Shall have banding slots in both directions to facilitate bundle banding. All biscuits comprising a bundle must be of uniform size. Size: Bundle range dimensions acceptable are 41" to 44" x 51" (104 to 112 cm) to 54" x 54" (137 x 137 cm) to 56" (142 cm) high. The only acceptable tying method shall be as follows: Using minimum 5/8" (1.6 cm) wide by .020" (.05 cm) thick steel straps, the bundles are to be banded with one vertical band per row and a minimum of two (horizontal) bands per bundle. Use of skids and/or support sheets of any material is not acceptable. Must be magnetically separated material and free of steel, lead, bottle caps, plastic cans and other plastic, glass, wood, dirt, grease, trash, and other foreign substances. Any free lead is basis for rejection. Any and all aluminum items, other than used beverage cans, are not acceptable. Items not covered in the specifications, including moisture, and any variations to this specification should be agreed upon prior to shipment between the seller and buyer.</p>	Tale	<p>PAINTED SIDING Shall consist of clean, low copper aluminum siding scrap, painted one or two sides, free of plastic coating, iron, dirt, corrosion, fiber, foam, or fiberglass backing or other non-metallic items.</p>
Taldon	<p>BALED ALUMINUM USED BEVERAGE CAN (UBC) SCRAP Shall have a minimum density of 14 pounds per cubic foot (225 kg/m³), and a maximum density of 17 pounds per cubic foot (273 kg/m³) for unflattened UBC and 22 pounds per cubic foot (353 kg/m³) for flattened UBC. Size: Minimum 30 cubic feet (.85 m³), with bale range dimensions of 24" to 40" (61 to 132 cm) by 30" to 52" (76 to 132 cm) by 40" to 84" (102 to 213 cm). The only acceptable tying method shall be as follows: four to six 5/8" (1.6 cm) x .020" (5 mm) steel bands, or six to ten #13 gauge steel wires (aluminum bands or wires are acceptable in equivalent strength and number). Use of skids and/or support sheets of any material is not acceptable. Must be magnetically separated material and free of steel, lead, bottle caps, plastic cans and other plastic, glass, wood, dirt, grease, trash, and other foreign substances. Any free lead is basis for rejection. Any and all aluminum items, other than used beverage cans, are not acceptable. Variations to this specification should be agreed upon prior to shipment between the buyer and seller.</p>	Talk	<p>ALUMINUM COPPER RADIATORS Shall consist of clean aluminum and copper radiators, and/or aluminum fins on copper tubing, free of brass tubing, iron and other foreign contamination.</p>
		Tall	<p>E.C. ALUMINUM NODULES Shall consist of clean E.C. aluminum, chopped or shredded, free of screening, hair-wire, iron, copper, insulation and other non-metallic items. Must be free of minus 20 mesh material. Must contain 99.45% aluminum content.</p>
		Tally	<p>ALL ALUMINUM RADIATORS FROM AUTOMOBILES Shall consist of clean aluminum radiators and/or condensers. Should be free of all other types of radiators. All contaminants including iron, plastic, and foam not to exceed 1% of weight. Any deviation to this specification, including oxidation and aluminum content, to be negotiated between buyer and seller.</p>
		Talon	<p>NEW PURE ALUMINUM WIRE AND CABLE Shall consist of new, clean, unalloyed aluminum wire or cable free from hair wire, ACSR, wire screen, iron, insulation and other non-metallic items.</p>
		Tann	<p>NEW MIXED ALUMINUM WIRE AND CABLE Shall consist of new, clean, unalloyed aluminum wire or cable which may contain up to 10% 6000 series wire and cable free from hair wire, wire screen, iron, insulation and other non-metallic items.</p>
		Tarry A	<p>CLEAN ALUMINUM PISTONS Shall consist of clean aluminum pistons to be free from struts, bushings, shafts, iron rings and non-metallic items. Oil and grease not to exceed 2%.</p>

CODE ITEM

Tarry B	CLEAN ALUMINUM PISTONS WITH STRUTS Shall consist of clean whole aluminum pistons with struts. Material is to be free from bushings, shafts, iron and non-metallic items. Oil and grease not to exceed 2%.
Tarry C	IRONY ALUMINUM PISTONS Shall consist of aluminum pistons with non-aluminum attachments to be sold on a recovery basis or by special arrangement between buyer and seller.
Tassel	OLD MIXED ALUMINUM WIRE AND CABLE Shall consist of old, unalloyed aluminum wire and cable which may contain up to 10% 6000 series wire and cable with not over 1% free oxide or dirt and free from hair wire, wire screen, iron, insulation and other non-metallic items.
Taste	OLD PURE ALUMINUM WIRE AND CABLE Shall consist of old, unalloyed aluminum wire and cable containing not over 1% free oxide or dirt and free from hair wire, wire screen, iron, insulation and other non-metallic items.
Tata	NEW PRODUCTION ALUMINUM EXTRUSIONS Shall consist of one alloy (typically 6063). Material may contain "butt ends" from the extrusion process but must be free of any foreign contamination. Anodized material is acceptable. Painted material or alloys other than 6063 must be agreed upon by buyer and seller.
Toto	ALUMINUM EXTRUSIONS "10/10" Material to consist of new production and old/used 6063 extrusions that may contain up to (but not exceed) 10 percent painted extrusions and 10 percent 6061 alloy extrusions. Must not contain other alloys of aluminum. Material should be free of zinc corners, iron attachments, felt, plastic, paper, cardboard, thermo break, and dirt and other contaminants.
Tutu	ALUMINUM EXTRUSION DEALER GRADE Shall consist of old extruded aluminum of one alloy, typically alloy 6063, 6061, or 7075. Material must be free of iron, thermo break, saw chips, zinc corners, dirt, paper, cardboard, and other foreign contamination. Percentages of paint or other alloys to be agreed upon by buyer and seller.
Teens	SEGREGATED ALUMINUM BORINGS AND TURNINGS Shall consist of aluminum borings and turnings of one specified alloy. Material should be free of oxidation, dirt, free iron, stainless steel, magnesium, oil, flammable liquids, moisture and other non-metallic items. Fines should not exceed 3% through a 20 mesh (U.S. standard) screen.

CODE ITEM

Telic	MIXED ALUMINUM BORINGS AND TURNINGS Shall consist of clean, uncorroded aluminum borings and turnings of two or more alloys and subject to deductions for fines in excess of 3% through a 20 mesh screen and dirt, free iron, oil, moisture and all other non-metallic items. Material containing iron in excess of 10% and/or free magnesium or stainless steel or containing highly flammable cutting compounds will not constitute good delivery. To avoid dispute, material should be sold on basis of definite maximum zinc, tin and magnesium content.
Tense	MIXED ALUMINUM CASTINGS Shall consist of all clean aluminum castings which may contain auto and airplane castings but no ingots, and to be free of iron, brass, dirt and other non-metallic items. Oil and grease not to total more than 2%.
Tepid	AIRCRAFT SHEET ALUMINUM Should be sold on recovery basis or by special arrangements with purchaser.
Terse	NEW ALUMINUM FOIL Shall consist of clean, new, pure, uncoated 1000 and/or 3000 and/or 8000 series alloy aluminum foil, free from anodized foil, radar foil and chaff, paper, plastics, or any other non-metallic items. Hydraulically briquetted material and other alloys by agreement between buyer and seller.
Tesla	POST CONSUMER ALUMINUM FOIL Shall consist of baled old household aluminum foil and formed foil containers of uncoated 1000, 3000 and 8000 series aluminum alloy. Material may be anodized and contain a maximum of 5% organic residue. Material must be free from radar chaff foil, chemically etched foil, laminated foils, iron, paper, plastic and other non-metallic contaminants.
Tetra	NEW COATED ALUMINUM FOIL Shall consist of new aluminum foil coated or laminated with ink, lacquers, paper, or plastic. Material shall be clean, dry, free of loose plastic, PVC and other non-metallic items. This foil is sold on a metal content basis or by sample as agreed between buyer and seller.
Thigh	ALUMINUM GRINDINGS Should be sold on recovery basis or by special arrangements with purchaser.
Thirl	ALUMINUM DROSSES, SPATTERS, SPILLINGS, SKIMMINGS AND SWEEPINGS Should be sold on recovery basis or by special arrangements with purchaser.
Thorn	ALUMINUM BREAKAGE Shall consist of aluminum with miscellaneous contaminants like iron, dirt, plastic and other types of contaminants. Material can either be sold based on aluminum recovery or content as agreed upon by buyer and seller. Must contain a minimum of 33% aluminum unless otherwise agreed upon by buyer and seller.

CODE	ITEM	CODE	ITEM
Throb	SWEATED ALUMINUM Shall consist of aluminum scrap which has been sweated or melted into a form or shape such as an ingot, sow or slab for convenience in shipping; to be free from corrosion, dross or any non-aluminum inclusions. Should be sold subject to sample or analysis.	Twirl	FRAGMENTIZER AIRCRAFT ALUMINUM SCRAP (2000 and 7000 series) The material as received must be dry and not to contain more than 2% free zinc, 1% maximum free magnesium, and 1.5% maximum free iron and stainless with a maximum of 2% analytical iron. Not to contain more than a total 5% maximum of non-metallics, of which no more than 1% shall be rubber and plastics. To be free of excessively oxidized material. Any variations to be sold by special arrangement between buyer and seller.
Tooth	SEGREGATED NEW ALUMINUM ALLOY CLIPPINGS AND SOLIDS Shall consist of new, clean, uncoated and unpainted aluminum scrap of one specified aluminum alloy with a minimum thickness of .015" (.38 mm) and to be free of hair wire, wire screen, dirt and other non-metallic items. Oil and grease not to total more than 1%. Also free from punchings less than 1/2" (1.27 cm) in size.	Twist	ALUMINUM AIRPLANE CASTINGS Shall consist of clean aluminum castings from airplanes and to be free from iron, dirt, brass, bushings, and non-metallic items. Oil and grease not to total more than 2%.
Tough	MIXED NEW ALUMINUM ALLOY CLIPPINGS AND SOLIDS Shall consist of new, clean, uncoated and unpainted aluminum scrap of two or more alloys with a minimum thickness of .015" (.38 mm) and to be free of hair wire, wire screen, dirt and other non-metallic items. Oil and grease not to total more than 1%. Also free from punchings less than 1/2" (1.27 cm) in size.	Twitch	FLOATED FRAGMENTIZER ALUMINUM SCRAP (from Automobile Shredders) Derived from wet or dry media separation device, the material must be dry and not contain more than 1% maximum free zinc, 1% maximum free magnesium, and 1% maximum of analytical iron. Not to contain more than a total 2% maximum of non-metallics, of which no more than 1% shall be rubber and plastics. To be free of excessively oxidized material, air bag canisters, or any sealed or pressurized items. Any variation to be sold by special arrangement between buyer and seller.
Tread	SEGREGATED NEW ALUMINUM CASTINGS, FORGINGS AND EXTRUSIONS Shall consist of new, clean, uncoated aluminum castings, forgings, and extrusions of one specified alloy only and to be free from sawings, stainless steel, zinc, iron, dirt, oil, grease and other non-metallic items.	Tweak	FRAGMENTIZER ALUMINUM SCRAP (from Automobile Shredders) Derived from either mechanical or hand separation, the material must be dry and not contain more than 4% maximum free zinc, 1% maximum free magnesium, and 1.5% maximum of analytical iron. Not to contain more than a total 5% maximum of non-metallics, of which no more than 1% shall be rubber and plastics. To be free of excessively oxidized material, air bag canisters, or any sealed or pressurized items. Any variation to be sold by special arrangement between buyer and seller.
Troma	Aluminum Auto or Truck Wheels Shall consist of clean, single-piece, unplated aluminum wheels of a single specified alloy, free of all inserts, steel, wheel weights, valve stems, tires, grease and oil and other non-metallic items. Variations to this specification should be agreed upon prior to shipment between the buyer and seller.	Twire	BURNT FRAGMENTIZER ALUMINUM SCRAP (from Automobile Shredders) Incinerated or burned material must be dry and not contain more than X% (% to be agreed upon by buyer and seller) ash from incineration, 4% maximum free zinc, 1% maximum free magnesium, and 1.5% maximum of analytical iron. Not to contain more than a total 5% maximum of non-metallics, of which no more than 1% shall be rubber and plastics. To be free of excessively oxidized material, air bag canisters, or any sealed pressurized items. Any variation to be sold by special arrangement between buyer and seller.
Trump	ALUMINUM AUTO CASTINGS Shall consist of all clean automobile aluminum castings of sufficient size to be readily identified and to be free from iron, dirt, brass, bushings, and non-metallic items. Oil and grease not to total more than 2%.		
Trill	ACSR Aluminum Conductor Steel Reinforced (ACSR) wire is a combination of steel and aluminum wire, of various configurations, with the expected aluminum recovery agreed upon by the buyer and the seller. Material to be free of other wires and cables unless mutually agreed upon.		
Twang	IAW Insulated aluminum wire, which may or may not contain other wires or metal shielding, with the expected aluminum recovery agreed upon by the buyer and the seller. The material to be free of other wires and cables unless mutually agreed upon.		

CODE ITEM

Zorba SHREDDED NONFERROUS SCRAP (predominantly aluminum)
 Shall be made up of a combination of the nonferrous metals: aluminum, copper, lead, magnesium, stainless steel, nickel, tin, and zinc, in elemental or alloyed (solid) form. The percentage of each metal within the nonferrous concentrate shall be subject to agreement between buyer and seller. Material generated by eddy current, air separation, flotation, screening, other segregation technique(s), or a combination thereof. Shall have passed one or more magnets to reduce or eliminate free iron and/or large iron attachments. Shall be free of radioactive material, dross, or ash. Material to be bought/sold under this guideline shall be identified as "Zorba" with a number to follow indicating the estimated percentage nonferrous metal content of the material (e.g., "Zorba 90" means the material contains approximately 90% nonferrous metal content). May also be screened to permit description by specific size ranges. (Refer also to Zorba under Mixed Metals.)

ZINC**HEAVIER PIECES OF ANY SIZE, LENGTH, AND WEIGHT ACCEPTABLE UPON MUTUAL AGREEMENT BETWEEN BUYER AND SELLER.****Saves OLD ZINC DIE CAST SCRAP**

Shall consist of miscellaneous old zinc base die castings, with or without iron and other foreign attachments. Must be free of borings, turnings, dross pieces, chunks, melted pieces and skimmings. All unmeltables, dirt, foreign attachments, and volatile substances (such as rubber, cork, plastic, grease, etc.) are deductible. Material containing in excess of 30% iron will not constitute good delivery.

Scabs NEW ZINC DIE CAST SCRAP

Shall consist of new or unused, clean, zinc base die castings. Castings to be unplated, unpainted, and free from corrosion.

Scout ZINC DIE CAST AUTOMOTIVE GRILLES

Shall consist of clean, old or used zinc base die cast automotive grilles, free from soldered material. All foreign attachments and extraneous materials are deductible.

Scope NEW PLATED ZINC DIE CAST SCRAP

Shall consist of new or unused clean, plated zinc base die castings, free from corrosion.

Score OLD SCRAP ZINC

Shall consist of clean dry scrap zinc, such as sheets, jar lids, clean unalloyed castings and anti-corrosion plates. Borings and turnings are not acceptable. Material must not be excessively corroded or oxidized. All foreign attachments and extraneous materials are deductible.

CODE ITEM**Screen NEW ZINC CLIPPINGS**

Shall consist of any new pure zinc sheets or stampings free from corrosion. To contain no foreign material or attachments. Printers zinc, such as engravers zinc, lithograph sheets and addressograph plates subject to special arrangements. Printers zinc to be free of routings.

Scribe CRUSHED CLEAN SORTED FRAGMENTIZERS DIE CAST SCRAP, AS PRODUCED FROM AUTOMOBILE FRAGMENTIZERS

To be clean, free of dirt, oil, glass, rubber, and trash. To contain a maximum of 5% unmeltables such as free iron, copper, aluminum and other metals.

Scroll UNSORTED ZINC DIE CAST SCRAP

Produced from automobile fragmentizers. Material to contain about 55% zinc-bearing scrap. Other nonferrous metals such as aluminum, stainless steel, red metal, etc., to be about 40%. Insulated copper wire about 1%. Trash, dirt, glass, rubber, oil, iron, not to exceed 5%. Any variations to be sold by special arrangement between buyer and seller.

Scrub HOT DIP GALVANIZERS SLAB ZINC DROSS (Batch Process)

Shall consist only of galvanizers unsweated zinc dross in slab form from hot dip galvanizing (Batch Process) with a minimum zinc content of 92% and shall be free of skimmings and tramp iron. Broken pieces under 2" in diameter shall not exceed 10% of the weight of each shipment. Slabs shall not weigh over 100 pounds each. Heavier pieces acceptable upon mutual agreement between buyer and seller. Material from continuous galvanizing operation is not acceptable. Blocks are acceptable upon mutual agreement.

Sculd ZINC DIE CAST SLABS OR PIGS

Shall consist of melted zinc base die cast materials, in smooth clean solid slabs or pigs. Material to be free from drosses and to contain a minimum zinc content of 90%. To contain a maximum of 0.1% nickel and maximum of 1% lead. Blocks are acceptable upon mutual agreement.

Seal CONTINUOUS LINE GALVANIZING SLAB ZINC TOP DROSS

Shall consist of unsweated zinc dross removed from the top of a continuous line galvanizing bath, in slab form not weighing in excess of 100 pounds each, with a minimum zinc content of 90%. Heavier pieces acceptable upon mutual agreement between buyer and seller. Shall be free of skimmings. Broken pieces under 2" in diameter shall not exceed 10% of the weight of each shipment.

Seam CONTINUOUS LINE GALVANIZING SLAB ZINC BOTTOM DROSS

Shall consist of unsweated zinc dross removed from the bottom of a continuous line galvanizing bath, in slab form not weighing in excess of 100 pounds each, with a minimum zinc content of 92%. Heavier pieces acceptable upon mutual agreement between buyer and seller. Shall be free of skimmings. Broken pieces under 2" in diameter shall not exceed 10% of the weight of each shipment.

CODE ITEM

Shelf PRIME ZINC DIE CAST DROSS
 Shall consist of metal skimmed from the top of pot of molten zinc die cast metal. Must be unsweated, unfluxed, shiny, smooth, metallic and free from corrosion or oxidation. Should be poured in molds or in small mounds weighing not over 75 pounds each.

MAGNESIUM**HEAVIER PIECES OF ANY SIZE, LENGTH, AND WEIGHT ACCEPTABLE UPON MUTUAL AGREEMENT BETWEEN BUYER AND SELLER.**

Wafer MAGNESIUM CLIPS
 Shall consist of clean magnesium clips in crucible size, free of copper, aluminum, and zinc flashings and excessive oil and grease. To be free of all foreign attachments.

Walnut MAGNESIUM SCRAP
 Shall consist of magnesium castings, magnesium engine blocks and transmission casings, bomber and car wheels, extrusions, and sheet. Material to be free from brass and copper inserts and all foreign attachments. To be free of anodes, hollow castings and explosives. Percentages of and penalties for dirt, oil, grease, and iron to be subject to agreement between buyer and seller. Excessively large pieces to be negotiated between buyer and seller.

Wine MAGNESIUM ENGRAVER PLATES
 To be free of copper, aluminum, zinc, and electrotype plates. To be clean and free of all foreign attachments. Magnesium plates shipped loose by agreement between buyer and seller.

Wood MAGNESIUM DOCKBOARDS
 Shall consist of clean magnesium dockboard cut or broken to size agreed upon by buyer and seller. To be free of all foreign attachments.

World MAGNESIUM TURNINGS
 It is recommended that these materials be sold by special arrangement between buyer and seller.

LEAD**HEAVIER PIECES OF ANY SIZE, LENGTH, AND WEIGHT ACCEPTABLE UPON MUTUAL AGREEMENT BETWEEN BUYER AND SELLER.**

Racks SCRAP LEAD—SOFT
 Shall consist of clean soft scrap lead, free of other materials such as drosses, battery plates, lead covered cable, hard lead, collapsible tubes, foil, type metals, aluminum, zinc, iron and brass fittings, dirty chemical lead and radioactive materials. Review packaging specifications and regulatory status pertaining to shipping with buyer prior to sale.

CODE ITEM

Radio MIXED HARD/SOFT SCRAP LEAD
 Shall consist of clean lead solids and lead shots, free of other materials, such as drosses, battery plates, lead covered cable, collapsible tubes, type metals, aluminum, zinc, iron and brass fittings, dirty chemical lead and radioactive materials. Review packaging specifications and regulatory status pertaining to shipping with buyer prior to sale.

Rains SCRAP DRAINED/DRY WHOLE INTACT LEAD
 To be free of any liquid. Cases to be either plastic or rubber and be complete including caps. Non-lead (nicad, ni-fe, carbonaire, etc.) not acceptable. Industrial, steel cased, aircraft (aluminum cased) and partial, cracked or broken batteries and batteries without caps subject to special agreement. Review packaging specifications and regulatory status pertaining to shipping with buyer prior to sale.

Rakes BATTERY LUGS
 To be free of scrap lead, wheel weights, battery plates, rubber and/or plastic case material and other foreign material. A minimum of 97% metallic content is required. Review packaging specifications and regulatory status pertaining to shipping with buyer prior to sale.

Relay LEAD COVERED COPPER CABLE
 Free of armored covered cable and foreign material subject to negotiation between buyer and seller.

Rents LEAD DROSS
 Should be clean and reasonably free of other materials such as iron, dirt, harmful chemicals or other metals. To be free of radioactive materials, aluminum and zinc. May be bought on an assay basis or as agreed to by buyer and seller. Other metals present such as antimony, tin, etc., to be accounted for as agreed between buyer and seller. Material to be readily dumped from drums. An extra charge may be assessed if material has to be mechanically removed. Review packaging specification and regulatory status pertaining to shipping with buyer prior to sale.

Rink SCRAP WET WHOLE INTACT LEAD BATTERIES
 Consisting of SLI (starting, lighting & ignition), automotive, truck, 8-D and commercial golf cart and marine-type batteries. Cases to be either plastic or rubber and to be complete. Non-lead (i.e., ni-cad, ni-fe, carbonaire, etc.) not acceptable. Other types i.e. aircraft (aluminum) gel-cel, lawnmower, etc., and partial, cracked or broken batteries or batteries without caps and the amount of liquid content and any variations to the specification subject to special agreement. Review packaging specifications and regulatory status pertaining to shipping with buyer prior to sale.

CODE	ITEM
Rono	SCRAP INDUSTRIAL INTACT LEAD CELLS Consisting of plates enclosed by some form of complete plastic case. Partial, cracked or broken cells, cells without caps and the amount of liquid content and any variations to the specification subject to special agreement. Review packaging specifications and regulatory status pertaining to shipping with buyer prior to sale.
Roper	SCRAP WHOLE INTACT INDUSTRIAL LEAD BATTERIES Consisting of bus, diesel, locomotive, telephone and/or steel cased batteries. Submarine batteries subject to negotiation. Partial, cracked, broken batteries or batteries without caps and the amount of liquid content and any variations to the specification subject to special agreement. Review packaging specifications and regulatory status pertaining to shipping with buyer prior to sale.
Ropes	LEAD WHEEL WEIGHTS To consist of lead tire balances with or without iron clips. Not to include scrap lead, lugs or plates unless specifically agreed to. To be free of foreign material. Review packaging specifications and regulatory status pertaining to shipping with buyer prior to sale.

NICKEL/STAINLESS/HI TEMP

HEAVIER PIECES OF ANY SIZE, LENGTH, AND WEIGHT ACCEPTABLE UPON MUTUAL AGREEMENT BETWEEN BUYER AND SELLER.

Aroma	NEW NICKEL SCRAP Shall consist of clean new sheet, plate, bar, tube, and any other wrought nickel scrap solids. Nickel minimum 99%; Cobalt maximum 0.25%; Copper maximum 0.50%. Free of castings, as well as any foreign attachments or other contamination.	Decoy	CURPO NICKEL SPINNINGS, TURNINGS, BORINGS Shall consist of clean, segregated (normally accepted analysis grades) either 70/30, 80/20, 90/10 cupro nickel spinnings, turnings, or borings. Particulars concerning physical description, analysis, and packaging, to be agreed upon between buyer and seller.
Burly	OLD NICKEL SCRAP Shall consist of old and/or new sheet, plate, bar, tube, and any other wrought nickel scrap solids. Material to contain a minimum of 98% nickel; Copper maximum 0.50%. This grade to be free of castings, soldered, brazed, sweated, or painted material, other metallic coating, foreign attachments, or any other contamination.	Delta	SOLDERED CUPRO NICKEL SOLIDS Shall consist of segregated (normally accepted analysis grades) either 70/30, 80/20, 90/10 cupro nickel solids, soldered, brazed, or sweated material. Must be free of trimmed seams and edges and all other contamination.
Dandy	NEW CUPRO NICKEL CLIPS AND SOLIDS Shall consist of clean, new, segregated (normally accepted analysis grades) either 70/30, 80/20, or 90/10 cupro nickel tube, pipe, sheet, plate, or other wrought solid forms. Must be free of foreign attachments or any other contamination.	Depth	MISCELLANEOUS NICKEL-COPPER AND NICKEL-COPPER IRON Shall consist of miscellaneous scrap in which the basic elements, by weight, are nickel and copper, such as copper nickel peelings, plating racks, and hangers, and all nickel and copper in attached or combined form. In all cases, miscellaneous nickel copper scrap should be sold by description and analysis.
Daunt	CUPRO NICKEL SOLIDS Shall consist of old, and/or new, segregated (normally accepted analysis grades) either 70/30, 80/20, 90/10 cupro nickel tube, pipe, sheet, plate, or other wrought solid forms. Maximum 2% sediment allowable. Any other forms of cupro nickel solids such as castings, gates, risers, spills, etc., packaged separately, may or may not be included, only upon agreement between buyer and seller. Must be free of foreign attachments and all other contamination.	Hitch	NEW R-MONEL CLIPPINGS AND SOLIDS Shall consist of clean, new, R-Monel sheet, plate, bar, rod, tube, pipe, or any other wrought scrap. Must be free of any foreign attachments or all other contamination.
		House	NEW MIXED MONEL SOLIDS AND CLIPPINGS Shall consist of new, clean R and K-Monel solids and clippings. Free of cast material, foreign attachments and all other contamination.
		Ideal	OLD MONEL SHEET AND SOLIDS Shall consist of clean R and K-Monel solids such as sheet, plate, pipe, rods, forgings, screen and wire cloth. Must be free of soldered, brazed, welded, or sweated material, cast material, foreign attachments, and all other contamination.
		Indian	K-MONEL SOLIDS Shall consist of clean K-Monel solids.
		Junto	SOLDERED MONEL SHEET AND SOLIDS Shall consist of soldered and/or brazed miscellaneous grades of Monel alloys in either wrought or cast form. Must be free of trimmed seams and edges, non-metallic filling, foreign attachments, and all other contamination. Particulars concerning physical description, assay, and packaging to be agreed upon between buyer and seller.
		Lemon	MONEL CASTINGS Shall consist of various types of clean Monel castings, assaying minimum 60% nickel. Must be free of foreign attachments or any other contamination.
		Lemur	MONEL TURNINGS Shall consist of mixed Monel turnings and borings containing a minimum of 60% nickel content, on a dry basis.

Pekoe 200 SERIES STAINLESS STEEL SCRAP SOLIDS

Shall consist of all types of clean AISI Series Stainless Steel Scrap Solids, which contain a maximum of .5% copper, free of foreign attachments and other contamination.

Sabot STAINLESS STEEL SCRAP

Shall consist of clean 18-8 type stainless steel clips and solids containing a minimum 7% nickel, 16% chrome, and have a maximum of .50% molybdenum, .50% copper, .045% phosphorous, and .03% sulfur, and otherwise free of harmful contaminants. Particulars concerning physical description, grading, additional analysis, and preparation to be agreed upon between buyer and seller.

Ultra STAINLESS STEEL TURNINGS

Shall consist of clean 18-8 type stainless steel turnings containing a minimum 7% nickel and 16% chrome, and to be free of nonferrous metals, non-metallics, excessive iron, oil and other contaminants. Particulars concerning physical description, assay, and packaging to be agreed upon between buyer and seller.

Vaunt EDISON BATTERIES

Nickel-iron batteries to be sold free of crates, copper terminal connectors, and excess liquid. Must be free of nickel cadmium batteries.

Zurik SHREDDED NONFERROUS SENSOR SORTED SCRAP (predominantly stainless steel)

Shall be made up of a combination of the nonferrous metals: stainless steel, insulated copper wire, aluminum, copper, lead, magnesium, nickel, tin, and zinc, in elemental or alloyed (solid) form. The percentage of each metal within the nonferrous concentrate shall be subject to agreement between buyer and seller. Material generated by computer sensing equipment (e.g., induction sensor sorting or X-ray) technique(s). Shall have passed one or more magnets to reduce or eliminate free iron and/or large iron attachments. Shall be free of radioactive material, dross, or ash. Material to be bought/sold under this guideline shall be identified as "Zurik" with a number to follow indicating the estimated percentage nonferrous content of the material (e.g., "Zurik 90" means the material contains approximately 90% nonferrous metal content). May also be screened to permit description by specific size ranges. (Refer also to Zurik under Mixed Metals.)

MIXED METALS**HEAVIER PIECES OF ANY SIZE, LENGTH, AND WEIGHT ACCEPTABLE UPON MUTUAL AGREEMENT BETWEEN BUYER AND SELLER.****Darth BALLASTS (FLUORESCENT)**

Shall consist of whole and complete fluorescent light ballasts containing copper inside. Must not contain polychlorinated biphenyls (PCBs). Electronic ballasts subject to agreement between buyer and seller.

Vader SEALED UNITS

Shall consist of whole steel-cased compressors originating from condensers from air conditioner units, freezers, refrigerators or the like, containing a motor inside. Free of hazardous materials, including chlorofluorocarbons (CFCs) or other refrigerants and polychlorinated biphenyls (PCBs). No loose iron or extra iron attachments such as framework permitted.

Elmo MIXED ELECTRIC MOTORS

Shall consist of whole electric motors and/or dismantled electric motor parts that are primarily copper-wound. May contain some aluminum-wound material, subject to agreement between buyer and seller. No excessive steel attachments such as gear reducers, iron bases, and pumps, or loose free iron allowed. Specification not to include sealed units or cast iron compressors.

Small Elmo ELECTRIC MOTORS

Shall be sized to approximately basketball size or smaller and shall consist of whole electric motors and/or dismantled electric motor parts that are primarily copper-wound. May contain some aluminum-wound material, subject to agreement between buyer and seller. No excessive steel attachments such as gear reducers, iron bases, and pumps, or loose free iron allowed. Specification not to include sealed units or cast iron compressors.

Sheema SHREDDED ELECTRIC MOTORS (also called "shredder pickings" or "meatballs")

Shall consist of mixed copper and aluminum bearing material from ferrous shredding, comprised of motors without cases. May contain insulated copper harness wire, subject to agreement between buyer and seller. Trace percentages of other contaminants and fines may be present. No free iron or sealed units.

Shelmo SHREDDED ELECTRIC MOTORS (also called "shredder pickings" or "meatballs")

Shall consist of mixed copper-bearing material from ferrous shredding, comprised of motors without cases. May contain up to 5 percent aluminum-wound material and may contain insulated copper harness wire, subject to agreement between buyer and seller. Trace percentages of other contaminants and fines may be present. No free iron or sealed units.

Zebra (High Density)

Shall consist of high-density nonferrous metals produced by media separation technology containing brass, copper, zinc, nonmagnetic stainless steel, and copper wire. Material to be dry and free from excess oxidation. The percentage and types of metals other than these, as well as the percentage and types of nonmetallic contamination, are to be agreed upon between the buyer and seller.

Zeppelin (Light Density)

Shall consist of light-density nonferrous metals produced by media separation technology and contain thin-gauge aluminum and magnesium. Material to be dry and free from excess oxidation. The percentage and types of metals other than aluminum and

magnesium, as well as the percentage and types of nonmetallic contamination, are to be agreed upon between the buyer and seller.

Zeyda SHREDDED INSULATED COPPER WIRE

Shall consist predominantly of recovered ICW (Insulated Copper Wire) that has been derived by either mechanical or physical separation. This material is likely to have other metals, in small percentages (should be less than 5%) that were not successfully separated. The percentage of each metal within the overall product shall be subject to agreement between buyer and seller. Shall have passed one or more magnets to reduce or eliminate free iron and/or large iron attachments. Shall be free of radioactive material, dross, or ash. Material to be bought/sold under this guideline shall be identified as "Zeyda" with two numbers to follow, indicating the estimated percentage recoverable copper wire and the second indicating the maximum amount of other metals or contaminants expected. (e.g., "Zeyda 45/3" means the material contains approximately 45% copper and up to 3% other material). May also be screened to permit description by specific size ranges.

Zorba SHREDDED NONFERROUS SCRAP (predominantly aluminum)

Shall be made up of a combination of the nonferrous metals: aluminum, copper, lead, magnesium, stainless steel, nickel, tin, and zinc, in elemental or alloyed (solid) form. The percentage of each metal within the nonferrous concentrate shall be subject to agreement between buyer and seller. Material generated by eddy current, air separation, flotation, screening, other segregation technique(s), or a combination thereof. Shall have passed one or more magnets to reduce or eliminate free iron and/or large iron attachments. Shall be free of radioactive material, dross, or ash. Material to be bought/sold under this guideline shall be identified as "Zorba" with a number to follow indicating the estimated percentage nonferrous metal content of the material (e.g., "Zorba 90" means the material contains approximately 90% nonferrous metal content). May also be screened to permit description by specific size ranges. (Refer also to Zorba under Aluminum.)

Zurik SHREDDED NONFERROUS SENSOR SORTED SCRAP (predominantly stainless steel)

Shall be made up of a combination of the nonferrous metals: stainless steel, insulated copper wire, aluminum, copper, lead, magnesium, nickel, tin, and zinc, in elemental or alloyed (solid) form. The percentage of each metal within the nonferrous concentrate shall be subject to agreement between buyer and seller. Material generated by computer sensing equipment (e.g., induction sensor sorting or X-ray) technique(s). Shall have passed one or more magnets to reduce or eliminate free iron and/or large iron attachments. Shall be free of radioactive material, dross, or ash. Material to be bought/sold under this guideline shall be identified as "Zurik" with a number to follow indicating the estimated percentage nonferrous content of the material (e.g.,

"Zurik 90" means the material contains approximately 90% nonferrous metal content). May also be screened to permit description by specific size ranges. (Refer also to Zurik under Nickel/Stainless/Hi Temp.)

OTHER

HEAVIER PIECES OF ANY SIZE, LENGTH, AND WEIGHT ACCEPTABLE UPON MUTUAL AGREEMENT BETWEEN BUYER AND SELLER.

Ranch BLOCK TIN

Block tin must assay minimum of 98% tin, and to be free of liquids, solder, and brass connections, pewter, pumps, pot pieces, and dirt.

Ranks PEWTER

Shall consist of tableware and soda-fountain boxes but should contain a minimum of 84% tin. Siphon tops to be accounted for separately. Material must be free of brass, zinc, and other foreign metals.

Raves HIGH TIN BASE BABBITT

Shall contain a minimum of 78% tin and be free of brassy or zincy metals.

Roses MIXED COMMON BABBITT

Shall consist of lead base bearing metal containing not less than 8% tin, free from Allens metal, ornamental, antimonial and type metal. Must be free from all zinc and excessive copper in the alloy.

Identification Checklist for Precious Metals

This Identification Check List for Precious Metals sets up a general basis for identifying types and grades of precious metals scrap by the scrap processor who will be familiar both to the precious metals refiner and to the plants generating precious metals scrap.

By checking this identification list, the scrap processor gives the refiner a fairly accurate conception of the material the processor has on hand and offers a basis for the refiner to quote an estimated price for the material.

Due to the high values and the constantly changing character of precious metal scrap, it is often the practice in the industry to require a sample to be submitted before giving refining schedules.

I. Scrap Sources

REFINED SILVER METAL – 99.9 MIN. PERCENT

Silver-bearing materials:

Anodes

Assemblies—Electrical

Batteries

Silver/Copper Plated

Silver/Cadmium

Silver/Zinc Silver/Magnesium

Blanking Scrap—Punchings

Brazing Alloys

Brushes—Electric Motors

Bullion
 Chemical Salts
 Clad Bi-Metal Parts
 Coin Silver
 Contacts
 Dental Amalgam
 Films
 Industrial X-Ray
 Medical X-Ray
 Lithographic
 Photographic Negatives
 Filters–Plating
 Flake–From Hypo Solution
 Recovery Systems
 Hooks–Plating–Nodules
 Jewelry Sweeps
 Paints–Paste
 Paper–Reproduction
 Plated Parts–Electrical–
 Electronic
 Plated Serving Pieces
 Plated Utensils
 Plated Wire
 Powders–Granulated
 Punchouts
 Relays–Electrical
 Resins
 Silver Lined Bearings–Diesel
 Locomotives and Aircraft
 Sludges–Plating and Precipitates
 Solutions–Plating
 Sterling Silver
 Tin Lead Alloys–Contaminated
 Turnings
 Wave Guides
 Wiping Rags

**REFINED GOLD METAL –
 99.5 MIN. PERCENT
 REFINED GOLD SPONGE –
 99.5 MIN. PERCENT**

Gold-bearing materials:
 Brazing Alloys
 Clad Metal Parts
 Contacts
 Dental Alloys
 Dental Scrap
 Dental Sweeps and Grindings
 Diodes
 Filled Scrap
 Filters–Plating
 Flakes
 Flashings
 Foil
 Hooks–Plating–Nodules
 Jewelry Scrap

Jewelry Sweeps and
 Grindings
 Paints and Paste
 Peelings
 Placer Gold
 Plated Parts–Electrical
 Plated Wire
 Powders
 Printed Circuit Boards
 Printed Circuit Boards with
 Components
 Punchouts
 Resins–Plating
 Salts–Chemical
 Sludges–Plating
 Solutions
 Sponge
 Tin Lead Alloys–
 Contaminated
 Transistors
 Wiping Rags
 Wire

**REFINED PALLADIUM
 METAL–99.9 MIN.
 PERCENT REFINED
 PALLADIUM SPONGE–
 99.9 MIN.**

Palladium-bearing materials:
 Catalysts
 Chemical Salts
 Clad Materials
 Contact Points
 Dental Alloys
 Dental Scraps
 Dental Sweeps
 Jewelry Scrap (Sweeps)
 Paste
 Plated Parts
 Powders
 Relays–Electrical
 Sludges
 Solutions
 Wire

**REFINED PLATINUM
 METAL–99.9 MIN.
 PERCENT REFINED
 PLATINUM SPONGE–
 99.9 MIN. PERCENT**

Platinum-bearing materials:
 Catalysts
 Chemicals
 Clad Materials
 Contacts
 Dental Alloys

Dental Scrap
 Dental Sweeps, Grindings
 Jewelry Scrap
 Jewelry Sweeps
 Laboratory Ware
 Magneto Points
 Powders and Paste
 Solutions–Plating
 Spark Plugs–Aircraft
 Thermocouple Wire

Scrap containing combinations of precious metals (gold, silver, platinum and palladium):
 Assemblies–Components
 Bullion
 Carbon
 Catalysts
 Chemicals
 Chips
 Drillings
 Electronic Scrap
 High Temperature Resistant
 Alloys
 Paints
 Paste
 Powders
 Relays–Electrical
 Resins
 Ribbons
 Rings
 Salts
 Solutions
 Sweeps
 Telephone Switching Scrap
 Thick Film
 Wire

**II. SCRAP
 CATEGORIES**

A. Solution

1. Acid
2. Basic
3. Matrix if known

B. Resin

C. Sludges

D. Burnable Material

1. Carbon
2. Filters
3. Film
4. Papers
5. Unprepared Sweeps
6. Others

E. Sweeps (Prepared)

F. Printed Circuit Board

1. Punch Outs
2. Non Assembled
3. Assembled

G. Glass to Metal Tubes, etc.

1. Solid Precious Metal Parts
2. Alloyed Metal Parts
3. Plated Metal Parts
4. Ceramics
5. Thick Film
6. Other...

H. Metal Scrap

I. Non-Magnetic

1. Impure Gold
2. Impure Silver
3. Copper Base
4. Aluminum Base
5. Brass Base
6. Bronze Base
7. Molybdenum Base
8. Beryllium Base
9. Lead Base
10. Tin Base
11. Other....

II. Magnetic

1. Kovar Base
2. Stainless Steel Base
3. Iron Base
4. Nickel Base
5. Other....

I. Catalyst

1. Carbon
2. Alumina
3. Rare Earth
4. Silica
5. Other

Guidelines for Ferrous Scrap: FS-2018

General Information

a. Cleanness. All grades shall be free of dirt, nonferrous metals, or foreign material of any kind, and excessive rust and corrosion. However, the terms "free of dirt, nonferrous metals, or foreign material of any kind" are not intended to preclude the accidental inclusion of negligible amounts where it can be shown that this amount is unavoidable in the customary preparation and handling of the particular grade involved.

b. Off-grade material. The inclusion in a shipment of a particular grade of iron and steel scrap of a negligible amount of metallic material which exceeds to a minor extent the applicable size limitations, or which fails to a minor extent to meet the applicable requirements as to quality or kind of material, shall not change the classification of the shipment, provided it can be shown that the inclusion of such off-grade material is unavoidable in the customary preparation and handling of the grade involved.

c. Residual alloys. Wherever the term "free of alloys" is used in the classifications given herein, it shall mean that any alloys contained in the steel are residual and have not been added for the purpose of making an alloy steel. Steel scraps shall be considered free of alloys when the residual alloying elements do not exceed the following percentages:

Nickel	.45%	Molybdenum	.10%
Chromium	.20%	Manganese	1.65%

The combined residuals other than manganese shall not exceed a total of 0.60 percent.

d. Deviations. Any deviations from the general classifications of iron and steel scrap may be consummated by mutual agreement between buyer and seller.

- 200 No. 1 heavy melting steel.**
Wrought iron and/or steel scrap 1/4 inch and over in thickness. Individual pieces not over 60 x 24 inches (charging box size) prepared in a manner to insure compact charging.
- 201 No. 1 heavy melting steel 3 feet x 18 inches.**
Wrought iron and/or steel scrap 1/4 inch and over in thickness. Individual pieces not over 36 x 18 inches (charging box size) prepared in a manner to insure compact charging.
- 202 No. 1 heavy melting steel 5 feet x 18 inches.**
Wrought iron and/or steel scrap 1/4 inch and over in thickness. Individual pieces not over 60 x 18 inches (charging box size) prepared in a manner to insure compact charging.
- 203 No. 2 heavy melting steel.***
Wrought iron and steel scrap, black and galvanized, 1/8 inch and over in thickness, charging box size to include material not suitable as No. 1 heavy melting steel. Prepared in a manner to insure compact charging.
- 204 No. 2 heavy melting steel.***
Wrought iron and steel scrap, black and galvanized, maximum size 36 x 18 inches. May include all automobile scrap properly prepared.
- 205 No. 2 heavy melting steel 3 feet x 18 inches.**
Wrought iron and steel scrap, black and galvanized, maximum size 36 x 18 inches. May include automobile scrap, properly prepared; however, to be free of sheet iron or thin gauged material.
- 206 No. 2 heavy melting steel 5 feet x 18 inches.**
Wrought iron and steel scrap, black and galvanized, maximum size 60 x 18 inches. May include automobile scrap, properly prepared; however, to be free of sheet iron or thin gauged material.
- 207 No. 1 busheling.**
Clean steel scrap, maximum size 2 feet by 5 feet, including new factory busheling (for example, sheet clippings, stampings, etc.). May not include old auto body and fender stock. Free of metal coated, limed, vitreous enameled, and electrical sheet containing over 0.5 percent silicon.
- 207A New black sheet clippings.**
For direct charging, maximum size 8 feet by 18 inches, free of old automobile body and fender stock, metal coated, lined, vitreous enameled and electrical sheet containing over 0.5 percent silicon. Must lay reasonably flat in car.
- 208 No. 1 bundles.**
New black steel sheet scrap, clippings or skeleton scrap, compressed or hand bundled, to charging box size, and weighing not less than 75 pounds per cubic foot. (Hand bundles are tightly secured for handling with a magnet.) May include Stanley balls or mandrel wound bundles or skeleton reels, tightly secured. May include chemically detinned material. May not include old auto body or fender stock. Free of metal coated, limed, vitreous enameled, and electrical sheet containing over 0.5 percent silicon.
- 209 No. 2 bundles.**
Old black and galvanized steel sheet scrap, hydraulically compressed to charging box size and weighing not less than 75 pounds per cubic foot. May not include tin or lead-coated material or vitreous enameled material.
- 210 Shredded scrap.**
Homogeneous iron and steel scrap, magnetically separated, originating from automobiles, unprepared No. 1 and No. 2 steel, miscellaneous baling and sheet scrap. Average density 50 pounds per cubic foot.
- 211 Shredded scrap.**
Homogeneous iron and steel scrap magnetically separated, originating from automobiles, unprepared No. 1 and No. 2 steel, miscellaneous baling and sheet scrap. Average density 70 pounds per cubic foot.

CODE	ITEM	CODE	ITEM
212	Shredded clippings. Shredded 1000 series carbon steel clippings or sheets. Material should have an average density of 60 pounds per cubic foot.	222	Shoveling turnings and iron borings. Same as shoveling turnings, but including iron borings.
213	Steel can bundles. Steel can scrap compressed to charging box size and weighing not less than 75 pounds per cubic foot. Cans may be baled without removal of paper labels, but free of other non-metallics. May include up to 5 gallon tin coated containers.	223	Iron borings. Clean cast iron or malleable iron borings and drillings, free of steel turnings, scale, lumps or excessive oil.
214	No. 3 bundles. Old sheet steel, compressed to charging box size and weighing not less than 75 pounds per cubic foot. May include all coated ferrous scrap not suitable for inclusion in No. 2 bundles.	224	Auto slabs. Clean automobile slabs, cut 3 feet x 18 inches and under.
215	Incinerator bundles. Tin can scrap, compressed to charging box size and weighing not less than 75 pounds per cubic foot. Processed through a recognized garbage incinerator.	225	Auto slabs. Clean automobile slabs, cut 2 feet x 18 inches and under.
216	Terne plate bundles. New terne plate sheet scrap, clippings or skeleton scrap, compressed or hand bundled, to charging box size, and weighing not less than 75 pounds per cubic foot. (Hand bundles are tightly secured for handling with a magnet.) May include Stanley balls or mandrel wound bundles or skeleton reels, tightly secured.	226	Briquetted iron borings. Analysis and density to consumer's specifications.
217	Bundled No. 1 steel. Wrought iron and/or steel scrap 1/8 inch or over in thickness, compressed to charging box size and weighing not less than 75 pounds per cubic foot. Free of all metal-coated material.	227	Briquetted steel turnings. Analysis and density to consumer's specifications.
218	Bundled No. 2 steel. Wrought iron or steel scrap, black or galvanized, 1/8 inch and over in thickness, compressed to charging box size and weighing not less than 75 pounds per cubic foot. Auto body and fender stock, burnt or hand stripped, may constitute a maximum of 60 percent by weight. (This percent based on makeup of auto body, chassis, driveshafts, and bumpers.) Free of all coated material, except as found on automobiles.	228	Mill scale. Dark colored, ranging from blue to black, ferromagnetic iron oxide forming on the surface of steel articles during heating and working.
219	Machine shop turnings. Clean steel or wrought iron turnings, free of iron borings, nonferrous metals in a free state, scale, or excessive oil. May not include badly rusted or corroded stock.	<i>*The identical designations given for these two classifications are in accordance with established industry practices in specifying the materials desired.</i>	
220	Machine shop turnings and iron borings. Same as machine shop turnings but including iron borings.	Electric Furnace Casting and Foundry Grades	
221	Shoveling turnings. Clean short steel or wrought iron turnings, drillings, or screw cuttings. May include any such material whether resulting from crushing, raking, or other processes. Free of springy, bushy, tangled or matted material, lumps, iron borings, nonferrous metals in a free state, grindings, or excessive oil.	229	Billet, bloom and forge crops. Billet, bloom, axle, slab, heavy plate and heavy forge crops, containing not over 0.05 percent phosphorus or sulphur and not over 0.5 percent silicon, free from alloys. Dimensions not less than 2 inches in thickness, not over 18 inches in width, and not over 36 inches in length.
		230	Bar crops and plate scrap. Bar crops, plate scrap, forgings, bits, jars, and tool joints, containing not over 0.05 percent phosphorus or sulphur, not over 0.5 percent silicon, free from alloys. Dimensions not less than 1/2 inch in thickness, not over 18 inches in width, and not over 36 inches in length.
		231	Plate and structural steel, 5 feet and under. Cut structural and plate scrap, 5 feet and under. Clean open hearth steel plates, structural shapes, crop ends, shearings, or broken steel tires. Dimensions not less than 1/4 inch thickness, not over 5 feet in length and 18 inches in width. Phosphorus or sulphur not over 0.05 percent.
		232	Plate and structural steel, 5 feet and under. Cut structural and plate scrap, 5 feet and under. Clean open hearth steel plates, structural shapes, crop ends, shearings, or broken steel tires. Dimensions not less than 1/4 inch thickness, not over 5 feet in length and 24 inches in width. Phosphorus or sulphur not over 0.05 percent.
		233	Cast steel. Steel castings not over 48 inches long or 18 inches wide, and 1/4 inch and over in thickness, containing

CODE	ITEM	CODE	ITEM
	not over 0.05 percent phosphorus or sulphur, free from alloys and attachments. May include heads, gates, and risers.		
234	Punchings and plate scrap. Punchings or stampings, plate scrap, and bar crops containing not over 0.05 percent phosphorous or sulphur and not over 0.5 percent silicon, free from alloys. All materials cut 12 inches and under, and with the exception of punchings or stampings, at least 1/8 inch in thickness. Punchings or stampings under 6 inches in diameter may be any gauge.	243A	Low residual, black foundry busheling. 1000 series black carbon steel scrap, 1/8 inch and over in thickness, not more than 12 inch x 24 inch, manganese content not more than 0.50 percent. Other parameters subject to agreement between supplier and consumer.
235	Electric furnace bundles. New black steel sheet scrap hydraulically compressed into bundles of size and weight as specified by consumer.	243B	Low residual, ductile quality shredded clips. Shredded black 1000 series carbon steel scrap, 1/8 inch and over in thickness, minimum average density of 75 PCF, manganese content not more than 0.50 percent. Other parameters subject to agreement between supplier and consumer.
236	Cut structural and plate scrap, 3 feet and under. Clean open hearth steel plates, structural shapes, crop ends, shearings, or broken steel tires. Dimensions not less than 1/4 inch in thickness, not over 3 feet in length and 18 inches in width. Phosphorus or sulphur not over 0.05 percent.	244	Springs and crankshafts. Clean automotive springs and crankshafts, either new or used.
237	Cut structural and plate scrap, 2 feet and under. Same as cut structural and plate scrap, 3 feet and under, except for length.	245	Alloy free turnings. Clean shoveling steel turnings free from lumps, tangled or matted material, iron borings, or excessive oil containing not more than 0.05 percent phosphorus or sulphur, and free of alloys.
238	Cut structural and plate scrap, 1 foot and under. Same as cut structural and plate scrap, 3 feet and under, except for length.	246	Alloy free short shoveling steel turnings. Clean shoveling steel turnings, free of lumps, tangled or matted material, iron borings, or excessive oil, containing not more than 0.05 percent phosphorus or sulphur, and free of alloys.
239	Silicon busheling. Clean silicon bearing steel scrap, not exceeding 12 inches in any dimension, including new factory busheling (for example, sheet clippings, stampings, etc.), having a silicon content of 0.05 percent to 5.0 percent.	247	Alloy free machine shop turnings. Clean steel turnings, free of iron borings or excessive oil, containing not more than 0.05 percent phosphorus or sulphur, and free of alloys. May not include badly rusted or corroded stock.
240	Silicon Clippings. Clean steel scrap, including new factory busheling (for example, sheet clippings, stampings, etc.), may not include old auto body and fender stock. Free of metal coated, limed, vitreous enameled, and electrical sheet containing minimum 1 percent silicon.	248	Hard steel cut 30 inches and under. Automotive steel consisting of rear ends, crankshafts, driveshafts, front axles, springs, and gears prepared 30 inches and under. May not include miscellaneous small shoveling steel or any pieces too bulky for gray iron foundry use.
241	Chargeable ingots and ingot butts. Chargeable ingots and ingot butts for material to be suitable and acceptable to the consumer containing not over 0.05 percent phosphorus or sulphur and not over 0.05 percent silicon free of alloys.	249	Chargeable slab crops. Chargeable slab crops for material to be suitable and acceptable to the consumer containing not over 0.05 percent phosphorus and 0.05 percent sulphur and not over 0.05 percent silicon and free of alloys.
242	Foundry steel, 2 feet and under. Steel scrap 1/8 inch and over in thickness, not over 2 feet in length or 18 inches in width. Individual pieces free from attachments. May not include nonferrous metals, cast or malleable iron, cable, vitreous enameled, or metal coated material.	250	Silicon bundles. Silicon sheet scrap, clippings or skeleton scrap, compressed or hand bundled, to charging box size, and weighing not less than 75 pounds per cubic foot, having a silicon content of 0.50 percent to 5.0 percent.
243	Foundry steel, 1 foot and under. Same specifications as 2-foot material, except for length.	251	Heavy turnings. Short, heavy steel turnings, containing not over 0.05 percent phosphorus or sulphur and free of alloys. May include rail chips. May not include machine shop or other light turnings and must weigh not less than 75 pounds per cubic foot in the original state of production.

CODE ITEM

Specially Processed Grades to Meet Consumer Requirements

Grades of scrap prepared especially to meet with steel mill or foundry requirements, individual specifications to be agreed on between consumer and supplier.

Cast Iron Grades

- 252 Cupola cast.**
Clean cast iron scrap such as columns, pipes, plates, and castings of a miscellaneous nature, including automobile blocks and cast iron parts of agricultural and other machinery. Free from stove plate, burnt iron, brake shoes or foreign material. Cupola size, not over 24 inches x 30 inches, and no piece over 150 pounds in weight.
- 253 Charging box cast.**
Clean cast iron scrap in sizes not over 60 inches in length or 30 inches in width, suitable for charging into an open hearth furnace without further preparation. Free from burnt iron, brake shoes, or stove plate.
- 254 Heavy breakable cast.**
Cast iron scrap over charging box size or weighing more than 500 pounds. May include cylinders and driving wheel centers. May include steel which does not exceed 10 percent of the casting by weight.
- 255 Hammer block or bases.**
Cast iron hammer blocks or bases.
- 256 Burnt iron.**
Burnt cast iron scrap, such as stove parts, grate bars, and miscellaneous burnt iron. May include sash weights or window weights.
- 257 Mixed cast.**
May include all grades of cast iron except burnt iron. Dimensions not over 24 inches x 30 inches and no piece over 150 pounds in weight.
- 258 Stove plate, clean cast iron stove.**
Free from malleable and steel parts, window weights, plow points, or burnt cast iron.
- 259 Clean auto cast.**
Clean auto blocks; free of all steel parts except camshafts, valves, valve springs, and studs. Free of non-ferrous and non-metallic parts.
- 260 Unstripped motor blocks.**
Automobile or truck motors from which steel and nonferrous fittings may or may not have been removed. Free from driveshafts and all parts of frames.
- 261 Drop broken machinery cast.**
Clean heavy cast iron machinery scrap that has been broken under a drop. All pieces must be of cupola size, not over 24 inches x 30 inches, and no piece over 150 pounds in weight.
- 262 Clean auto cast, broken, not degreased.**
Clean auto blocks, free of all steel parts except camshafts, valves, valve springs and studs. Free of non-

CODE ITEM

- ferrous and non-metallic parts, and must be broken to cupola size, 150 pounds or less.
- 263 Clean auto cast, degreased.**
Free of all steel parts except camshafts, valves, valve springs, and studs. Free of nonferrous and non-metallic parts, and must be broken into cupola size, 150 pounds or less.
- 264 Malleable.**
Malleable parts of automobiles, railroad cars, locomotives, or miscellaneous malleable iron castings. Free from cast iron and steel parts and other foreign material.
- 265 Broken ingot molds and stools.**
Broken ingot molds and stools, cast iron, maximum size 2 feet x 3 feet x 5 feet.
- 266 Unbroken ingot molds and stools.**
Unbroken ingot molds and stools, cast iron.

Special Boring Grades

- 267 No. 1 chemical borings.**
New clean cast or malleable iron borings and drillings containing not more than 1 percent oil, free from steel turnings, or chips, lumps, scale, corroded or rusty material.
- 268 Briquetted cast iron borings, hot process.**
Cast iron borings, heated, briquetted, to a density of approximately 85 percent, oil and water content under 1 percent.
- 269 Briquetted cast iron borings, cold process.**
Cast iron boring briquettes, free of steel and non-ferrous material, hydraulically compressed into a cohesive solid, reasonably free of oil, and having a density of not less than 60 percent.
- 270 Malleable borings.**
Clean malleable iron borings and drillings, free of steel turnings, scale, lumps and excessive oil.
- 271 No. 2 chemical borings.**
New clean cast or malleable iron borings and drillings, containing not more than 1.5 percent oil, free from steel turnings, or chips, lumps, scale, corroded or rusty material.

Steel From Scrap Tires**General Guidelines**

Items not covered in the specifications, and any variations in the specification, are subject to special arrangement between buyer and seller. Percentages listed below are by weight.

Preparation

Consumer and supplier to agree upon preparation for transport, such as the following:

Loose-Whole.

Loose-Chopped. If wire is chopped or shredded, parties may wish to specify the means of processing and/or characteristics of the final product (density, length of pieces, etc.).

CODE ITEM

Baled. Bales of wire should maintain their form during loading, shipment, unloading, storage, and handling typical of that done at a consuming facility, unless otherwise specified.

Baled—High Density. Hydraulically compressed, no dimension larger than 24", density of at least 75 pounds per square foot.

Baled—HRB/Low Density. Density of less than 75 pounds per square foot. Each bale secured with sufficient number of bale ties drawn tight to insure a satisfactory delivery.

Other Means of Preparation. Individual specifications to be agreed upon between consumer and supplier.

- 272 Pulled bead wire (Truck)—Grade 1.**
Not chopped; made up of loops of wire. Less than five percent (<5%) rubber/fiber.
- 273 Pulled bead wire (Truck)—Grade 2.**
Not chopped; made up of loops of wire. Five to ten percent (5-10%) rubber/fiber.
- 274 Pulled bead wire (Truck)—Grade 3.**
Not chopped; made up of loops of wire. Greater than ten percent (>10%) rubber/fiber.
- 275 Pulled bead wire (Passenger)—Grade 1.**
Not chopped; made up of loops of wire. Less than five percent (<5%) rubber/fiber.
- 276 Pulled bead wire (Passenger)—Grade 2.**
Not chopped; made up of loops of wire. Five to ten percent (5-10%) rubber/fiber.
- 277 Pulled bead wire (Passenger)—Grade 3.**
Not chopped; made up of loops of wire. Greater than ten percent (>10%) rubber/fiber.
- 278 Processed tire wire (Ferrous)—Grade 1.**
Chopped. Less than two percent (<2%) rubber/fiber.
- 279 Processed tire wire (Ferrous)—Grade 2.**
Chopped. Less than five percent (<5%) rubber/fiber.
- 280 Processed tire wire (Ferrous)—Grade 3.**
Chopped. Five to ten percent (5-10%) rubber/fiber.
- 281 Processed tire wire (Ferrous)—Grade 4.**
Chopped. Ten to twenty percent (10-20%) rubber/fiber.
- 282 Processed tire wire (Ferrous)—Grade 5.**
Chopped. Greater than twenty percent (>20%) rubber/fiber.

Railroad Ferrous Scrap*

Specifications of Association of American Railroads promulgated by its Purchases and Materials Management Division (Revised 1973)

- (2) Axles, Steel.**
Solid car and/or locomotive friction bearing, 8 inch diameter and under (free of axles with key-way between wheel seats, no axles of shorter lengths than distance between wheel seats to be included).

CODE ITEM

- (2A) Axles, Steel.**
Solid car and/or locomotive friction bearing over 8 inch diameter (free of axles with key-way between wheel seats, no axles of shorter length than distance between wheel seats to be included).
- (3) Axles, Steel.**
Roller bearing 8 inch diameter and under (no axles of shorter lengths than distance between wheel seats to be included).
- (3A) Axles, Steel.**
Roller bearing over 8 inch diameter (no axles of shorter length than distance between wheel seats to be included).
- (4) Spikes, Track Bolts and Nuts, and Lock Washers, may include Rail Anchors.**
- (5) Tie Plates.**
Steel.
- (6) Rail Joints, Angle and/or Splice Bars.**
Steel.
- (9) Bolsters and/or Truck Sides, Frames: Uncut.**
Cast steel.
- (11) Cast Steel, No. 2.**
Steel castings, over 18 inches wide and/or over 5 feet long.
- (11A) Cast Steel, No. 1.**
Steel castings, 18 inches and under, not over 5 feet long, including cut truck side frames and bolsters.
- (12) Cast Iron, No. 1.**
Cast iron scrap, such as columns, pipes, plates, and/or castings of miscellaneous nature, but free from stove plates, brake shoes, and burnt scrap. Must be cupola size, not over 24 x 30 inches in dimension and no piece to weigh over 150 pounds. Must be free from foreign material.
- (13) Cast Iron, No. 2.**
Pieces weighing over 150 pounds, but not more than 500 pounds. Free from burnt cast.
- (14) Cast Iron, No. 3.**
Pieces weighing over 500 pounds; includes cylinders, driving wheel centers and/or all other castings. (Free from hammer blocks or bases.)
- (15) Cast Iron, No. 4.**
Burnt cast iron scrap, such as grate bars, stove parts and/or miscellaneous burnt scrap.
- (16) Cast Iron Brake Shoes.**
Brakes shoes of all types except composition-filled shoes.
- (17) Couplers and/or Knuckles.**
Railroad car and/or locomotive steel couplers, knuckles and/or locks stripped clean of all other attachments.
- (18) Frogs and/or Switches, uncut.**
Steel frogs and switches that have not been cut apart, exclusive of manganese.

CODE	ITEM	CODE	ITEM
(18A)	Railbound Manganese Frogs and Switch Points with manganese inserts that have not been cut apart.	(35)	Structural, Wrought Iron and/or Steel Uncut. All steel or steel mixed with iron from bridges, structures and/or equipment that has not been cut apart, may include uncut bolsters, brakebeams, steel trucks, underframes, channel bars, steel bridge plates, frog and/or crossing plates and/or other steel of similar character.
(23)	Malleable. Malleable parts of automobiles, railroad cars, locomotive and/or miscellaneous malleable castings.	(36)	Tires. All locomotive, not cut to specified lengths.
(24)	Melting Steel, Railroad No. 1. Clean wrought iron or steel scrap, 1/4 inch and over in thickness, not over 18 inches in width, and not over 5 feet in length. May include pipe ends and material 1/8 inch to 1/4 inch in thickness, not over 15 inches x 15 inches. Individual pieces cut so as to lie reasonably flat in charging box.	(38)	Turnings, No. 1. Heavy turnings from wrought iron and/or steel railroad axles or heavy forgings and/or rail chips, to weigh not less than 75 pounds per cubic foot. Free from dirt or other foreign material of any kind. Alloy steel scrap may be excluded from these specifications by mutual agreement between buyer and seller.
(27)	Rail, Steel No. 1. Standard section tee rails, original weight 50 pounds per yard or heavier, 10 feet long and over. Suitable for rerolling into bars and shapes. Free from bent and twisted rails, frog, switch, and guard rails, or rails with split heads and broken flanges. Continuous welded rail may be included provided no weld is over 9 inches from the end of the piece of rail.	(38A)	Turnings, Drillings and/or Borings, No. 2. Cast, wrought, steel and/or malleable iron borings, turnings and/or drillings mixed with other metals.
(28A)	Rail, Steel No. 2 Cropped Rail Ends. Standard section, original weight of 50 pounds per yard and over, 18 inches long and under.	(40)	Wheels, No. 1. Cast iron car wheels.
(28B)	Rail, Steel No. 2 Cropped Rail Ends. Standard section, original weight of 50 pounds per yard and over, 2 feet long and under.	(42)	Wheels, No. 3. Solid cast steel, forged, pressed and/or rolled steel car and/or locomotive wheels, not over 42 inches diameter. (Specify kind in offering.)
(28C)	Rail, Steel No. 2 Cropped Rail Ends. Standard section, original weight 50 pounds per yard and over, 3 feet long and under.	(45)	Destroyed Steel Cars. Bodies of steel cars cut apart sufficiently to load. (Specify kind.)
(29)	Rail, Steel No. 3. Standard section tee, girder, and/or guard rails, to be free from frog and switch rails not cut apart, and contain no manganese, cast, welds, or attachments of any kind except angle bars. Free from concrete, dirt, and foreign material of any kind.	(45A)	Destroyed Steel Car Sides and Box Car Roofs. Cut to a maximum length of... and a maximum width of... suitable for use in super presses and shears without additional preparation.
(30)	Sheet Scrap, No. 1. Under 3/16 inch thick, may include hoops, band iron and/or steel, scoops and/or shovels (free of wood). Must be free from burnt or metal coated material, cushion, or other similar springs.		
(31)	Sheet Scrap, No. 2. Galvanized or tinned material and/or gas retorts, and/or any other iron or steel material not otherwise classified.		
(32)	Steel, Tool. (Specify kind in offering.)		
(33)	Steel, Manganese. All kinds of manganese, rail, guard rails, frogs and/or switch points, cut or uncut.		
(34)	Steel, Spring. Coil and/or elliptical, minimum thickness 1/4 inch, may be assembled or cut apart.		
(34A)	Steel, Spring. Coil only.		

**Specifications in force as of publication date.*

Guidelines for Glass Cullet: GC-2018

Container Glass Cullet Specifications

Preamble

These standards and practices apply to container glass cullet for purchase or sale in the United States and Canada. Transactions covering shipments to or from other countries may also be in accordance with these standards and practices and may be modified by mutual agreement between buyer and seller. These specifications are guidelines for buying and selling container glass cullet and always subject to the buyer and seller's agreement.

Scrap Glass Definitions

Container Glass Cullet: crushed or whole scrap soda-lime-silica container glass.

Unprocessed Container Glass Cullet: broken or whole scrap glass containers that comply with the proper ISRI glass specifications.

Processed (Furnace Ready) Container Glass Cullet: crushed and whole contaminate-free scrap container glass that complies with the proper ISRI glass specifications.

Organic Matter: consists of organic materials that are non-container glass items; for example, paper labels should not exceed 0.2%.

Ferrous Materials: are magnetic metals, i.e. steel, iron, etc., and therefore must be removed during scrap glass processing.

Non-ferrous Materials: are non-magnetic metals, i.e. aluminum, lead, copper, etc., and therefore must be removed during glass processing.

The Purchase Agreement

Each transaction covering the purchase or sale of container glass cullet should be confirmed in writing and include agreement on the following items:

1. Product

Where possible, each container glass cullet grade shall be specified in accordance with the grade as defined.

2. Quantity

Where possible, the quantity shall always be specified in terms of a definite number of tons of 2,000 pounds each.

A. If the quantity is specified in tons, the order shall be considered completed when aggregate shipments are 5% under or over the quantity ordered.

B. If the quantity is specified in carloads or truckloads, a "load" shall be defined as a truck, trailer, or railroad car loaded to full visible capacity not to exceed established legal weight limits.

3. Packaging

It should be stated whether shipped units are to be in boxes, or in bulk by railroad car, truck, or trailer. Where possible, approximate weights should be specified.

4. Price Units

The price agreed upon shall be clearly stated in US dollars and cents per 2,000 pounds or in US dollars and cents per hundred weight.

5. Terms

Terms shall be "net cash 30 days after date of shipment" unless otherwise agreed upon.

Arbitration

In the event of a total disagreement between buyer and seller, the dispute should be submitted to ISRI arbitration.

In all cases, the cost of arbitration shall be borne by the party found to be at fault, or split in the event of compromise, as determined by the arbitrators.

UNPROCESSED FLINT CONTAINER GLASS CULLET SPECIFICATIONS

Composition: Soda-lime-silica beverage or food container glass.

Cullet Colors Segregation: Flint Cullet

Flint	95-100%
Amber	0-5%
Green	0-5%
Other Colors	0-5%

Size: Cullet may be broken but not pulverized.

Moisture: Cullet should be free of excess moisture.

Contaminant Listings:

Outthrow Materials: Normal container labels; ring and metal closures where processing capabilities permit.

Prohibitive Materials: Non-acceptable items include non-container glass (vision ware, light bulbs, crystal, windows, mirrors, drinking glasses, ceramic, milk glass, etc.) metals, ores, minerals, bricks, clay, grinding and refractory materials, rocks, clay and ceramic closures.

General: The quality of the unprocessed flint container glass cullet must be such that after beneficiation with a conventional container glass cullet processor it will be suitable for the production of glass containers.

UNPROCESSED AMBER CONTAINER GLASS CULLET SPECIFICATIONS

Composition: Soda-lime-silica beverage or food container glass.

Cullet Colors Segregation: Amber Cullet

Amber	90-100%
Flint	0-5%
Green	0-5%
Other Colors	0-5%

Size: Cullet may be broken but not pulverized.

Moisture: Cullet should be free of excess moisture.

Contaminant Listings:

Outthrow Materials: Normal container labels; ring and metal closures where processing capabilities permit.

Prohibitive Materials: Non-acceptable items include non-container glass (vision ware, light bulbs, crystal, windows, mirrors, drinking glasses, ceramic, milk glass, etc.) metals, ores, minerals, bricks, clay, grinding and refractory materials, rocks, clay and ceramic closures.

General: The quality of the unprocessed amber container glass cullet must be such that after beneficiation with a conventional container glass cullet processor it will be suitable for the production of glass containers.

UNPROCESSED GREEN CONTAINER GLASS CULLET SPECIFICATIONS

Composition: soda-lime-silica beverage or food container glass.

Cullet Colors Segregation: Green Cullet

Green	90-100%
Flint	0-10%
Amber	0-10%
Other Colors	0-5%

Size: Cullet may be broken but not pulverized.

Moisture: Cullet should be free of excess moisture.

Contaminant Listings:

Outthrow Materials: Normal container labels; ring and metal closures where processing capabilities permit.

Prohibitive Materials: Non-acceptable items include non-container glass (vision ware, light bulbs, crystal, windows, mirrors, drinking glasses, ceramic, milk glass, etc.) metals, ores, minerals, bricks, clay, grinding and refractory materials, rocks, clay and ceramic closures.

General: The quality of the unprocessed green container glass cullet must be such that after beneficiation with a conventional container glass cullet processor it will be suitable for the production of glass containers.

PROCESSED (FURNACE READY) FLINT CONTAINER GLASS CULLET SPECIFICATIONS

Composition: Soda-lime-silica container glass.

Container Glass Cullet Colors Segregation: Flint Cullet

Flint	95-100%
Amber	0-5%
Green	0-1%
Other Colors	0-5%
Total NON-Flint Cullet	= <5%

Size: Various sizes from whole glass containers to -100 Mesh. However, the ideal material size is 3/8" to 3/4" with a 10% minimum of fine particles. Material size is based upon buyer and seller's agreement.

Contaminant Listings:

Outthrow Materials: Organic Matter, allowable percentage based upon buyer and seller's agreement.

Prohibitive Materials:

- Ferrous Metals
- Nonferrous Metals

Ceramics (such as cups, saucers, dinnerware, pottery, etc.)

Other Glass (for example, plate window glass, heat-resistant glass—such as Pyrex—and lead-based glass—such as crystal ware, television tubes, vision ware, etc.)

Other Materials (such as bricks, rocks, etc.)

PROCESSED (FURNACE READY) AMBER CONTAINER GLASS CULLET SPECIFICATIONS

Composition: Soda-lime-silica container glass

Container Glass Cullet Colors Segregation: Amber Cullet

Amber	90-100%
Flint	0-10%
Green	0-10%
Other Colors	0-5%
Total NON-Amber Cullet	= <10%

Size: Various sizes from whole glass containers to -100 Mesh. However, the ideal material size is 3/8" to 3/4" with a 10% minimum of fine particles. Material size is based upon buyer and seller's agreement.

Contaminant Listings:

Outthrow Materials: Organic Matter, allowable percentage based upon buyer and seller's agreement.

Prohibitive Materials:

- Ferrous Metals
- Nonferrous Metals
- Ceramics (such as cups, saucers, dinnerware, pottery, etc.)
- Other Glass (for example, plate window glass, heat-resistant glass—such as Pyrex—and lead-based glass—such as crystal ware, television tubes, vision ware, etc.)
- Other Materials (such as bricks, rocks, etc.)

PROCESSED (FURNACE READY) GREEN CONTAINER GLASS CULLET SPECIFICATIONS

Composition: Soda-lime-silica container glass

Container Glass Cullet Colors Segregation: Green Cullet

Green	70-100%
Flint	0-15%
Amber	0-15%
Other Colors	0-10%
Total NON-Green Cullet	= <30%

The color green typically consists of a variety of shades, for example: emerald green or lime green.

Size: Various sizes from whole glass containers to -100 Mesh. However, the ideal material size is 3/8" to 3/4" with a 10% minimum of fine particles. Material size is based upon buyer and seller's agreement.

Contaminant Listings:

Outthrow Materials: Organic Matter, allowable percentage based upon buyer and seller's agreement.

Prohibitive Materials:

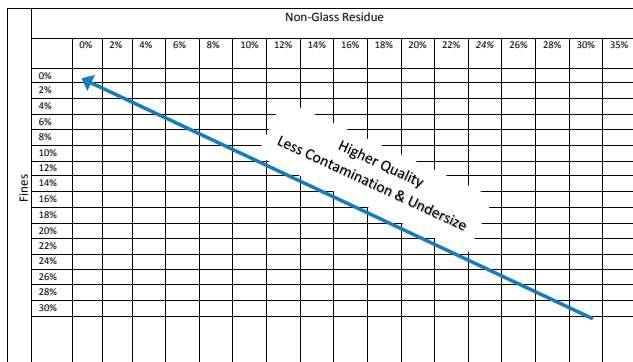
- Ferrous Metals
- Nonferrous Metals
- Ceramics (such as cups, saucers, dinnerware, pottery, etc.)

Other Glass (for example, plate window glass, heat-resistant glass—such as Pyrex—and lead based glass—such as crystal ware, television tubes, vision ware, etc.)
 Other Materials (such as bricks, rocks, etc.)

Material Recovery Facility (MRF) Glass

Material Recovery Facility-derived 3-Color Mixed Container Glass ("MRF Glass"):

MRF Glass consists of crushed or whole scrap Flint (clear), Amber (brown), and Green (emerald) container/bottle glass made from soda-lime-silica. These standards and practices apply to 3-color mixed glass for purchase or sale in the United States and Canada. Transactions covering shipments to or from other countries may also be in accordance with these standards and practices and may be modified by mutual agreement between buyer and seller. These specifications are guidelines for buying and selling MRF glass and are always subject to the buyer and seller's agreement. It is recognized that MRF Glass may be mixed with other materials as a result of recycling collection convenience and efficiency, and that quality levels vary widely based on the amount of contamination mixed in with the glass.



Since there are many different generations of Material Recovery Facilities (MRFs), cleaning equipment in operation, and curbside collection programs, the quality generated by MRFs varies widely. Processors evaluate this heterogeneous material by evaluating the amount of:

- Residue (non-glass residue): Higher amounts of residue result in a lower rank as the processor must separate this residue and dispose of it.
- Undersize: Undersize is otherwise known as "fines". Higher amounts of undersize result in quality issues as very small pieces of glass can't be optically sorted. If a disproportional amount of the stream is too small, it can overwhelm the processor's capabilities

Contamination:

Non-Glass Residue - Materials found in dual stream and single stream curbside collection programs entering a Material Recovery Facility (MRF). Examples of this material may be: paper, wood, food or organic material, metal/plastic closures, labels, corks, rock, dirt, and other inert materials. Maximum tolerance -35%.

Undersized or Pulverized Material ("Fines") -This material consists of mixed color glass particles crushed so small as to render current optical sortation unfeasible. Glass particles less than 1/8" are typically considered to be fines. Maximum tolerance - 30%.

Ceramics - This material consists of broken bits of household ceramic. Examples of ceramic materials are dinner plates, mugs, cups, etc. Maximum tolerance - 2%

Moisture - This is considered excessive water mixed with glass. Examples of moisture are small fibers soaked by rain, ice or snow. Organic materials and dirt can also contain moisture. Maximum tolerance - 5%.

Prohibitives: This material is not allowed and can subject a load to rejection procedure.

- 025% of total load allowed:
 - Pyro Ceramics (Fireplace glass)
 - Gypsum, wallboard, drywall, glass from construction & demolition debris mixed with CaCO3 fines
 - Common moisture-absorbing desiccants (silica gels beads, alumina pellets, closet paks, etc.)
- 0% of total load allowed:
 - CRT glass
 - Lead glass
 - Tempered window glass
 - Flammables
 - Radioactive waste
 - Weapons
 - Medical Waste
 - Insecticides
 - Poisons
 - Heavy Metals
 - Asbestos
 - Other materials that can be classified as hazardous or harmful to human health or the environment

Guidelines for Paper Stock: PS-2018

Preamble

These standards and practices apply to paper stock for re-pulping. Transactions may be modified by mutual agreement between Buyer and Seller. Once Buyer and Seller come to an agreement regarding the transaction there will either be a purchase or sales agreement outlining the transaction, terms and conditions which will be used for the signed transactions. This agreement will serve as the "governing document" for the transaction.

"Good Faith" Relationship between Buyer-Seller

The following principles of "good faith" have been established:

1. Seller must use due diligence to ascertain that shipments consist of properly packed paper stock and that shipments are made during the period specified.
2. Arbitrary deductions, cancellations and/or rejections by the Buyer are counter to acceptable good trade practices.
3. Seller shall provide the quality of paper stock agreed upon but shall not be responsible for the use of the paper stock or of the manufactured product.

I. The Purchase Agreement

Each transaction covering the purchase or sale of paper stock shall be confirmed by either a purchase or sales agreement which may include the following:

1. Quality

Where possible, purchases shall be specified in accordance with the grade as defined in the latest paper stock section of the ISRI Scrap Specification Circular. Any deviation from the grade listed in the circular should be otherwise specified and agreed upon by both parties in the purchase or sales agreement.

2. Quantity

- a. The Buyer and Seller shall establish minimum weights for each load
- b. The quantity for the purchase or sale of the paper stock shall always be specified in terms of a definite number of short tons of 2000 pounds each or metric tons of 2204.6 pounds each. In addition, the number of loads shall be specified.
- c. Packing unit type, such as bales, skids, roles, pallets, boxes, securely tied bundles or loose, should be specified in the Agreement.

3. Pricing and Terms

Each transaction covering the purchase or sale of paper stock shall be confirmed in writing stating the negotiated price and payment terms agreed to by both the buyer and seller.

4. Shipping Period, Terms and Instructions

- a. Period shall be understood to be within 30 days of the date of the order unless otherwise specified and subsequently agreed to by both buyer and seller.
- b. Shipping terms shall be indicated by the use of the International Chamber of Commerce's Incoterms for shipping that can be found in the addendum at the end of the preamble.
- c. The Shipping instructions for each load should clearly specify shipping schedule routes, carrier and destination. Shipping instructions shall be provided by the buyer at the time of the order. These instructions should also be included on the bill of lading when shipping for export. Information should include documentation, inspection requirements and pictures if required.

II. Fulfillment by the Seller

The practice of the Seller shall be in accordance with the following:

1. Acceptance

All orders shall be confirmed.

2. Grading

Paper stock which is sold under the grade names appearing in the paper stock section of the *ISRI Scrap Specifications Circular* shall conform to those grading definitions.

3. Packing

Each unit must be sufficiently secured to ensure a satisfactory delivery.

4. Tare

If agreed to by the Buyer, sides and headers may be used to make a satisfactory delivery of the bales but must not be excessive. The weight of skids, Gaylord boxes and other similar materials shall be deducted from the gross invoice weight.

5. Loading

Paper stock shall be loaded as follows:

- a. Before they are loaded, railcars, trucks, trailers and containers shall be free from objectionable materials and odors, and shall have clean sound floors and doors.
- b. All loads should consist entirely of one grade of paper stock unless otherwise agreed to. When two or more grades are included in the same load, units of each grade should be kept together in a separate part of the railcar, truck, trailer or container.
- c. Paper stock must be loaded in a manner that will minimize shifting and breakage. Excessive breakage due to improper loading can be cause for a claim or rejection.
- d. Paper stock shall be loaded in accordance with the customer's preferred safe loading practices or industry safety best practices such as outlines in the ISRI/AF&PA Shipping Guide for Baled Paper Products as a reference.

Please refer to the following guide for valuable safety information: <http://www.isri.org/safeshipping>

6. Shipping Notice/Bill of Lading

A bill of lading or shipping notice shall accompany each shipment to the Buyer and should include the following:

- a. Date of shipment
- b. Release number (if applicable)
- c. Number of units
- d. Grade of paper units
- e. Weight of load - For combination loads, individual unit weights may be indicated.
- f. Name of trucking company, trailer, rail car or container number and driver's signature
- g. Routing Instruction (If applicable)
- h. Destination (If applicable)
- i. Shipper's signature

7. Invoicing

Invoices, if required, should conform to instructions on the order and include the following data:

- a. Date of shipment
- b. Railcar, truck number or container number
- c. Customer's order number
- d. Release Number (if applicable)/Bill of Lading number
- e. Shipper's invoice number
- f. Point of sale
- g. Number of units
- h. Weight and grade
- i. Price and extension
- j. Payment terms, including credit terms and discounts

8. Downgrade Claims/Rejections

When notified of a claim/rejection, the Seller should advise the Buyer, within two business days, as to which of the following procedures the Seller has decided upon:

- a. Agree with the Buyer to a compromise acceptance and settlement.
- b. Inspect the quality of the rejected material. The inspection and final disposition by the Seller should take place within five business days of the notification. By mutual agreement, this time limit may be exceeded.
- c. Order repossession of the material (if applicable).
- d. Request that the Buyer agree to submit the rejected shipment to arbitration.

III. Fulfillment by the Buyer

The practice of the Buyer shall be in accordance with the following:

1. The Buyer will confirm all orders

2. Unloading

While unloading the shipment the buyer is to inspect the contents so far as possible.

If the shipment appears to be in accordance with the purchase or sales agreement, the buyer shall proceed with the unloading.

The Buyer is obligated to supply the Seller with the weight of all the received material.

If the shipment does not appear to be in accordance with the purchase or sales agreement, the Buyer shall immediately notify the Seller.

3. Claims and Rejections

In the event of a claim or rejection, the Buyer shall be responsible for any paper stock used and the freight thereon. The buyer should use due diligence to maintain all controversial or rejected paper stock from external deterioration or contamination.

IV. Miscellaneous Practices

1. Ownership

- a. When loaded the shipment is purchased "ex works" shipping point (INCOTerm - EXW) and is in accordance with the purchase agreement covering the transaction, it becomes the property of the Buyer
- b. When the shipment is purchased on a "delivered" basis and is in accordance with the purchase or sales agreement covering the transaction, it remains the property of the Seller until it is delivered to the Buyer and verified with proof of delivery.

2. Carrier Selection

- a. When shipment is on an EXW basis, selection of the carrier is at the discretion of the Buyer unless otherwise agreed.
- b. When the shipment is on a delivered basis, selection of the carrier is at the discretion of the Seller unless otherwise agreed.

3. Excess Freight and Charges

- a. Any excess freight charges accruing on a shipment due to the failure by the Seller to adhere to the purchase agreement is the liability of the Seller and includes switching and freight charges.
- b. Any excess freight charges accruing on a shipment due to the failure of the Buyer to adhere to the purchase agreement is the liability of the Buyer and includes switching and freight charges
- c. Any demurrage accruing on a shipment due to the failure of the seller to ship in accordance with the purchase agreement except with respect to quality is the liability of the seller
- d. In the event that a rejection for quality stands, any demurrage accruing on the shipment prior to notification to the Seller shall be the Buyer's liability.

4. Weight Discrepancies

In the event of a weight discrepancy between the buyer and seller, the buyer's weight will govern as long as the weight is taken from a certified scale.

In the event that the buyer does not have a certified weight ticket then the seller's weight will govern as long as it is produced from a certified scale.

No adjustments shall be made on any shipment of paper stock when the weight variation is 1% or less for domestic loads and 2% or less for export loads.

If the variation exceeds 1% for domestic loads or 2% for export loads, the Seller may initiate a Weight Review by submitting a certified scale weight (showing the gross, tare and net of the load) and/or a loading tally showing individual bale weights. The Buyer shall then review the data and either:

- a. Adjust the received weight, or
- b. Decline the appeal, in which case the Buyer's weight shall prevail.

5. Moisture Content

All paper must be packed dry with a moisture content of 12% which is deemed to be the maximum dry limit. Prior to shipment the buyer and seller shall agree to a moisture percentage and a method by which moisture is to be tested. The agreement is to be confirmed through the purchase agreement and/or the shipping agreement.

Where and when excess moisture is suspected and determined to be present in the shipment, the Buyer has the right to request an adjustment and if a settlement cannot be reached, the Buyer has the right to reject the shipment. The buyer will conduct testing either by using the mutually agreed upon method or in accordance with the American Forest & Paper Association's Moisture Guide for Measuring Moisture in Recovered Paper Bales. In the event that excess moisture is detected the buyer has the right to request a weight adjustment and if a settlement cannot be reached, the buyer has the right to reject the shipment.

Information: www.afandpa.org/docs/default-source/one-pagers/bale-moisture-guide.pdf

V. Arbitration

In the event of a dispute where agreement cannot be reached between Buyer and Seller, the dispute may be submitted to ISRI arbitration as long as one of the parties is a member of the association. Refer to ISRI Arbitration Services section of this document for further information.

VI. Grade Definitions

The definitions which follow describe grades as they should be sorted and packed. Consideration should be given to the fact that paper stock, as such, is a secondary material produced manually and may not be technically perfect. Definitions may not specifically address all types of processes used in the manufacture or recycling of paper products. Specific requirements should be discussed between Buyer and Seller during negotiations.

1. Outthrows

The term "Outthrows" as used throughout this section is defined as "all papers that are so manufactured or treated or are in such a form as to be undesirable for consumption as the grade specified."

2. Prohibitive Materials

The term "Prohibitive Materials" as used throughout this section is defined as:

- a. Any materials which by their presence in a packing of paper stock, in excess of the amount allowed, will make the pack unusable as the grade specified.
- b. Any materials that may be damaging to equipment.

3. Zero Tolerance

The term "Zero Tolerance" as used throughout this section is defined as:

Any material that contains any amount of Medical, Organic, Food Waste, Hazardous, Poisonous, Radioactive or Toxic waste and other harmful substances or liquids.

4. Other Acceptable Papers

The term "Other Acceptable Papers" as used throughout this section is defined as "all other papers that are deemed acceptable by the buyer and allowed in that buyer's pack up to the percentage allowed."

5. Glossary of Terms

A supplemental glossary of paper stock terms is located at the end of the Guidelines for Paper Stock. The purpose of this limited list of terms is to help the user better understand specific grade definitions contained within this Circular.

(4) Boxboard Cuttings

Consists of new cuttings of paperboard used in the manufacture of folding cartons, set-up boxes and similar box-board products.

Prohibitive Materials may not exceed	1/2 of 1%
Outthrows plus prohibitives may not exceed	2%

(5) Mill Wrappers

Consists of paper used as outside wrap for rolls, bundles, or skids of finished paper.

Prohibitive Materials may not exceed	1/2 of 1%
Outthrows plus prohibitives may not exceed	3%

(9) Over-Issue News (OI or OIN)

Consists of unused, overrun newspapers printed on newsprint, containing not more than the normal percentage of rotogravure and colored sections.

Prohibitive Materials	None permitted
Outthrows plus prohibitives	None permitted

(10) Magazines (OMG)

Consists of coated magazines, catalogues, and similar printed materials. May contain a small percentage of uncoated news-type paper.

Prohibitive Materials may not exceed	1%
Outthrows plus prohibitives may not exceed	3%

(11) Old Corrugated Containers (OCC)

Consists of corrugated containers having liners of either test liner or kraft.

Prohibitive Materials may not exceed	1%
Outthrows plus prohibitives may not exceed	5%

(12) Double-Sorted Old Corrugated (DS OCC)

Consists of double-sorted corrugated containers, generated from supermarkets and/or industrial or commercial facilities, having liners of test liner or kraft. Material has been specially sorted to be free of boxboard, off-shore corrugated, plastic, and wax.

Prohibitive Materials may not exceed	1/2 of 1%
Outthrows plus prohibitives may not exceed	2%

(13) New Double-Lined Kraft Corrugated Cuttings (DLK)

Consists of new corrugated cuttings having liners of either test liner or kraft. Treated medium or liners, insoluble adhesives, butt rolls, slabbed or hogged medium, are not acceptable in this grade.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	2%

(14) Fiber Cores

Consists of paper cores made from either recycled paperboard and/or linerboard, single or multiple plies. Metal or plastic end caps, wood plugs, and textile residues are not acceptable in this grade.

Prohibitive Materials may not exceed	1%
Outthrows plus prohibitives may not exceed	5%

(15) Used Brown Kraft

Consists of brown kraft bags free of objectionable liners and original contents.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1/2 of 1%

(16) Mixed Kraft Cuttings

Consists of new brown kraft cuttings, sheets and bag scrap free of stitched paper.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	.1%

(17) Carrier Stock

Consists of printed or unprinted, unbleached new beverage carrier sheets and cuttings. May contain wet strength additives.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1%

(18) New Colored Kraft

Consists of new colored kraft cuttings, sheets and bag scrap, free of stitched papers.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1%

(19) Kraft Grocery Bag (KGB)

Consists of new brown kraft bag cuttings, sheets and misprint bags.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1%

(20) New Kraft Multi-Wall Bag

Consists of new brown kraft multi-wall bag cuttings, sheets, and misprint bags, free of stitched papers.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1%

(21) New Brown Kraft Envelope Cuttings

Consists of new unprinted brown kraft envelopes, cuttings or sheets.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1%

(22) Mixed Flyleaf Shavings

Consists of trim of magazines, catalogs, inserts and similar printed matter, not limited with respect to groundwood, uncoated or coated stock, and may contain the bleed of cover and insert stock as well as beater-dyed paper and solid color printing.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	2%

(23) Telephone Directories

Consists of clean telephone directories printed for or by telephone directory publishers.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1/2 of 1%

(24) White Blank News (WBN)

Consists of unprinted cuttings and sheets of white newsprint or other uncoated white groundwood paper of similar quality.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1%

(25) Groundwood Computer Printout (GW CPO)

Consists of groundwood papers which are used in forms manufactured for use in data processing machines. This grade may contain colored stripes and impact or nonimpact (e.g., laser) computer printing.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	2%

(26) Publication Blanks (CPB)

Consists of unprinted cuttings or sheets of white coated or filled groundwood content paper.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1%

(27) Coated Flyleaf Shavings

Consists of lightly printed trim from magazines, catalogs and similar printed matter, not limited with respect to groundwood, uncoated or coated stock. The bleed of cover, insert card stock, and beater-dyed paper may not exceed 2%.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1%

(28) Coated Soft White Shavings (SWS)

Consists of unprinted, coated, and uncoated shavings and sheets of white groundwood-free printing paper. May contain a small percentage of groundwood.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1%

(29) (Grade not currently in use)**(30) Hard White Shavings (HWS)**

Consists of shavings or sheets of unprinted, untreated white groundwood-free paper.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1/2 of 1%

(31) Hard White Envelope Cuttings (HWEK)

Consists of groundwood-free cuttings, shavings, or sheets of unprinted, untreated, and uncoated white envelope paper.

Prohibitive Materials None permitted
Outthrows plus prohibitives may not exceed 1/2 of 1%

(32) (Grade not currently in use)**(33) New Colored Envelope Cuttings**

Consists of groundwood-free cuttings, shavings, or sheets of untreated, uncoated bleachable colored envelope paper.

Prohibitive Materials None permitted
Outthrows plus prohibitives may not exceed 2%

(34) (Grade not currently in use)**(35) Semi Bleached Cuttings**

Consists of sheets and cuttings of unprinted, untreated, groundwood-free paper such as file folder stock, untreated milk carton stock, or manila tag.

Prohibitive Materials None permitted
Outthrows plus prohibitives may not exceed 2%

(36) Unsorted Office Paper (UOP)

Consists of printed or unprinted paper typically generated in an office environment that may include a document destruction process. This grade may contain white, colored, coated and uncoated papers, manila and pastel colored file folders.

Prohibitive Materials may not exceed 2%
Outthrows plus prohibitives may not exceed 10%

(37) Sorted Office Paper (SOP)

Consists of paper, as typically generated by offices, containing primarily white and colored groundwood-free paper, free of unbleached fiber. May include a small percentage of groundwood computer printout and facsimile paper.

Prohibitive Materials may not exceed 1%
Outthrows plus prohibitives may not exceed 5%

(38) (Grade not currently in use)**(39) Manifold Colored Ledger (MCL)**

Consists of sheets, shavings, and cuttings of industrially-generated printed or unprinted colored or white groundwood-free paper. All stock must be uncoated and free of nonimpact printing. A percentage of carbonless paper is allowable.

Prohibitive Materials may not exceed 1/2 of 1%
Outthrows plus prohibitives may not exceed 2%

(40) Sorted White Ledger (SWL)

Consists of uncoated, printed or unprinted sheets, shavings, guillotined books, and cuttings of white groundwood-free ledger, bond, writing, and other paper which has similar fiber and filler content.

Prohibitive Materials may not exceed 1/2 of 1%
Outthrows plus prohibitives may not exceed 2%

(41) Manifold White Ledger (MWL)

Consists of sheets, shavings, and cuttings of industrially-generated printed or unprinted white groundwood-free paper. All stock must be uncoated.

Prohibitive Materials may not exceed 1/2 of 1%
Outthrows plus prohibitives may not exceed 2%

(42) (Grade no longer in use)**(43) Coated Book Stock (CBS)**

Consists of coated groundwood-free paper, printed or unprinted in sheets, shavings, guillotined books and cuttings. A reasonable percentage of paper containing fine groundwood may be included.

Prohibitive Materials None permitted
Outthrows plus prohibitives may not exceed 2%

(44) Coated Groundwood Sections (CGS)

Consists of printed, coated groundwood paper in sheets, sections, shavings or guillotined books. This grade may not include news quality groundwood paper.

Prohibitive Materials None permitted
Outthrows plus prohibitives may not exceed 2%

(45) Lightly Printed Bleached Board Cuttings

Consists of groundwood-free printed bleached board cuttings, free from misprint sheets, cartons, wax, greaseproof lamination, metallic, and inks, adhesives or coatings that are insoluble.

Prohibitive Materials may not exceed 1/2 of 1%
Outthrows plus prohibitives may not exceed 2%

(46) Printed Bleached Board

Consists of groundwood-free misprint sheets, cartons and cuttings of bleached board, free from wax, greaseproof lamination, metallic, and inks, adhesives or coatings that are insoluble.

Prohibitive Materials may not exceed 1%
Outthrows plus prohibitives may not exceed 2%

(47) Unprinted Bleached Board

Consists of groundwood-free unprinted, untreated bleached board cuttings, sheets or rolls, free from wax, greaseproof lamination and adhesives or coatings that are insoluble.

Prohibitive Materials None permitted
Outthrows plus prohibitives may not exceed 1%

(48) #1 Bleached Cup Stock (#1 Cup)

Consists of untreated cuttings or sheets of coated or uncoated cup base stock. Cuttings with slight bleed may be included. Must be free of wax, poly, and other coatings that are insoluble.

Prohibitive Materials None permitted
Outthrows plus prohibitives may not exceed 1/2 of 1%

(49) #2 Printed Bleached Cup Stock (#2 Cup)

Consists of printed, untreated formed cups, cup die cuts, and misprint sheets of coated or uncoated cup base stock. Glues must be water soluble. Must be free of wax, poly, and other coatings that are insoluble.

Prohibitive Materials None permitted
Outthrows plus prohibitives may not exceed 1%

(50) Unprinted Bleached Plate Stock

Consists of groundwood-free bleached coated or uncoated, untreated and unprinted plate cuttings and sheets.

Prohibitive Materials None permitted
Outthrows plus prohibitives may not exceed 1/2 of 1%

(51) Printed Bleached Plate Stock

Consists of groundwood-free bleached coated or uncoated, untreated printed plates and sheets. Must be free of coatings or inks that are insoluble.

Prohibitive Materials	None permitted
Outthrows plus prohibitives may not exceed	1%

(52) Aseptic Packaging and Gable-Top Cartons

Consists of liquid packaging board containers including empty, used, polyethylene (PE)-coated, printed one-side aseptic and gable-top cartons containing no less than 70% bleached chemical fiber and may contain up to 6% aluminum foil and 24% PE film.

Prohibitive Materials may not exceed	2%
Outthrows plus prohibitives may not exceed	5%

(54) Mixed Paper (MP)

Consists of all paper and paperboard of various qualities not limited to the type of fiber content, sorted and processed at a recycling facility.

Prohibitive Materials may not exceed	2%
Outthrows may not exceed	3%

(56) Sorted Residential Papers & News (SRPN)

Consists of sorted newspapers, mail, magazines, printing and writing papers and other acceptable papers generated from residential programs (such as residential household and apartment collections and drop-off centers) sorted and processed at a recycling facility. Containerboard and brown grades (OCC, Kraft bags, boxboard and Kraft carrier board) will be considered as "Outthrows." *Due to some technical questions, a clarification to the language above was made in August 2019.*

Prohibitive Materials may not exceed	2%
Outthrows may not exceed	3%

(58) Sorted Clean News (SCN)

Consists of sorted newspapers from source separated collection programs, converters, drop-off centers and paper drives containing the normal percentages of roto gravure, colored and coated sections. May contain inserts that would normally be included in the newspaper in the proper proportions. Grade must be free of excessive ink, brown grades and non-paper material. (Some mills may require pack to be free of flexographic inks.)

Prohibitive Materials may not exceed	1/2 of 1%
Outthrows plus prohibitives may not exceed	1%
Other papers may not exceed	10%

Specialty Grades

The grades listed below are produced and traded in carload and truckload quantities throughout the United States, and because of certain characteristics (i.e., the presence of wet strength, polycoatings, plastic, foil, carbon paper, hot melt glue), are not included in the regular grades of paper stock. However, it is recognized that many mills have special equipment and are able to utilize large quantities of these grades. Since many paper mills around the world do use these specialty grades, they are being listed with appropriate grade numbers for easy reference.

The Paper Stock Industries Chapter of ISRI is not establishing specific specifications, which would refer to such factors as the type of wet strength agent used, the percentage of wax, the amount of polycoating, whether it is on top of or under the printing, etc. The specification for each grade should be determined between Buyer and Seller, and it is recommended that purchase be made based on sample.

These specialty grades are as follows:

1-S	White Waxed Cup Cuttings
2-S	Printed Waxed Cup Cuttings
3-S	Poly Coated Cup Stock
4-S	Polycoated Bleached Kraft-Unprinted
5-S	Polycoated Bleached Kraft-Printed
6-S	Polycoated Milk Carton Stock
7-S	Polycoated Diaper Stock
8-S	Polycoated Boxboard Cuttings
9-S	(This Grade No Longer in Use)
10-S	Printed and/or Unprinted Bleached Sulphate Containing Foil
11-S	Waxed Corrugated Cuttings
12-S	Wet Strength Corrugated Cuttings
13-S	(This Number Not Currently in Use)
14-S	Beer Carton Scrap
15-S	Contaminated Bag Scrap
16-S	Insoluble Glued Free Sheet Paper and/or Board (IGS)
17-S	White Wet Strength Scrap
18-S	Brown Wet Strength Scrap
19-S	Printed and/or Colored Wet Strength Scrap
20-S	File Stock
21-S	(This Number Not Currently in Use)
22-S	Ruled White
23-S	Flyleaf Shavings Containing Hot Melt Glue
24-S	(This Number Not Currently in Use)
25-S	Books with Covers
26-S	(This Number Not Currently in Use)
27-S	(This Number Not Currently in Use)
28-S	(This Number Not Currently in Use)
29-S	(This Number Not Currently in Use)
30-S	Plastic Windowed Envelopes
31-S	Textile Boxes
32-S	Printed TMP
33-S	Unprinted TMP
34-S	Manila Tabulating Cards
35-S	Sorted Colored Ledger
36-S	Computer Printout (CPO)

Glossary of Paper Stock Terms

The following is a glossary of paper stock terms used within section VI, Grade Definitions, of the Guidelines for Paper Stock. These terms are not intended as a dictionary, but as a guide to help the Circular user better understand specific grade definitions as used in the recovered paper industry.

ADHESIVES: Bonding substances that are non-water soluble are considered contaminants in pulp subs, groundwood and deinking grades.

BEATER-DYED: Paper dyed or colored during the paper manufacturing process.

BLEACHED: Paper that has been whitened by chemicals.

BOARDS: Paperboard 0.006 inch or thicker.

BOGUS: Paper of inferior quality to a standard grade.

BOXBOARD: Paperboard made from a variety of recovered fibers having sufficient folding properties and thickness to be used to manufacture folding or set-up boxes.

CHEMICAL WOOD-FIBER PULP: Generic for cellulose fiber isolated and purified by a chemical digestive process.

CHIPBOARD: Uncoated, non-folding paperboard made from a variety of recovered papers, having sufficient strength and structural properties to be used to manufacture game boards, book covers, notebook backing and similar products.

COATINGS: A layer of adhesives, clays, varnish or any barrier applied to paper.

CONTAINERBOARD: Linerboard and corrugated medium used to manufacture shipping containers.

CORES: Paper tubes on which rolls of paper may be wound for shipment.

CORRUGATED CONTAINERS: Shipping containers made with kraft paper linerboard and corrugated medium.

CUTTINGS: Paper stock by-product of paper converting operations.

FILLER/FILLED: Denotes papers that have minerals (clays or other pigments) added for improving quality or color.

FLYLEAF/SHAVINGS: Trim scrap from printing operations.

FREESHEET: Paper that contains less than 10% groundwood fiber (synonym: groundwood-free).

GROUNDWOOD: Paper made with fibers produced without chemical pulping.

GILT: Metallic (gold or silver) inks used in printing.

HOGGED: Paper that has been mechanically torn or ripped to reduce its original size.

HOT-MELT: A type of glue or adhesive applied while hot/warm. Considered a contaminant in some grades.

IMPACT (PRINTING): A paper printing process that physically applies ink to the paper surface.

INSOLUBLE GLUES: Glues that won't dissolve (break down) in water.

JUTE: Strong, long-fibered pulp made from hemp.

KRAFT: Paper made from sulfate pulp (synonyms: brown and strong).

LAMINATED: Paper manufactured by fusing one or more layers of paper together.

LINERBOARD: Outside layers of a combination board used to manufacture corrugated shipping containers.

MANIFOLD: May denote continuous forms or business forms with several parts (may be interleaved with carbon paper or be carbonless papers).

MEDIUM: The inner corrugated fluted material used to manufacture corrugated shipping containers.

NON-IMPACT: Papers having printing images formed without impact.

OFF-SHORE/ASIAN: Denotes corrugated shipping containers manufactured overseas and containing bogus liners or medium. (Color is somewhat lighter/more yellow than North American produced materials).

PAPERBOARD: Denotes paper products used for packaging (corrugated boxes, folding cartons, set-up boxes, etc.).

ROTOGRAVURE: A paper printing (intaglio) process typically used to create the highest quality of smoothness on coated and uncoated papers. Excess quantities are considered an outthrow in grades #7, #8, and #9.

SECTIONS: Unbound, unused printed material with full ink coverage.

SHAVINGS: Trim from converting and bindery operations.

SIGNATURES: A section of book obtained by folding a single sheet of printing paper.

SLABBED: Type of paper stock normally generated by cutting rolls.

SULFITE: Papers and boards made from pulps made from an acid process.

SULPHATE: Papers and boards made from alkaline processed pulps.

TEST LINER: Liners, which are the outer ply of any kind of paperboard, containing 100% recycled material.

TMP: Thermomechanical pulp.

TREATED: Paper manufactured with additives.

TRIM: Cuttings of paper stock generated at converting or bindery operations which normally have little or no printing.

ULTRA-VIOLET (UV) INKS/COATINGS: Papers having inks or coatings dried by utilizing an ultraviolet radiation method. Considered a contaminant in deinking grades.

WET STRENGTH: Papers that have been treated with a moisture-resistant chemical that inhibits pulping.

Guidelines for Plastic Scrap: P-2018

Baled Recycled Plastic Scrap Commercial Guidelines

General Information

Commercial Guidelines for Baled Recycled Plastic Scrap were developed to provide industry-wide quality standards. These standards will facilitate commodity trading of these materials. They will also focus suppliers of such material on the quality requirements of their customers.

Product

These guidelines are designed with the potential for dealing with all recycled plastic in bale form. Initial specifications refer only to bottles. The code framework allows for generation of guidelines for all types of plastic packaging materials (including rigids and flexibles) with room for expansion to other plastic products and resins including those which are used to produce durable goods. Guidelines for those products may be added at a later date.

Bale Density

Bales shall be compressed to a minimum density of 10 pounds per cubic foot and a maximum density to be determined by individual contract between Buyer and Seller. Increased density may improve transportation efficiency, but over-compression may adversely affect the ability of a Buyer to separate, sort, and reprocess the material.

Bale Tying Material

Bale wires, ties, or straps shall be made of non-rusting or corroding material.

Bale Integrity

Bale integrity must be maintained through loading, shipping, handling, and storage. Distorted or broken bales are difficult to handle. They are unacceptable and may result in downgrading, rejection, or charge back.

Allowable Contamination

Unspecified materials must not exceed 2% of total bale weight. Bales which contain over 2% will be subjected to reduction in the contracted price of the material as well as charges for disposal of the contaminants. The reduced percentage will vary depending upon the amount and type of contamination. Quality of the baled plastic is the primary factor which determines the value.

Prohibited Material

Certain materials are understood to be specified as "prohibited." Such materials will render the bale "non-specification" and may cause some customers to reject the entire shipment. These may include plastic materials which have a deleterious effect on each other when reprocessed, and materials such as agricultural chemicals, hazardous materials, flammable liquids and/or their containers, and medical waste.

Liquids

Plastic containers/materials should be empty and dry when baled. The bale should be free of any free flowing liquid of any type.

General

Shipments should be essentially free of dirt, mud, stones, grease, glass, and paper. The plastic must not have been damaged by ultraviolet exposure. Every effort should be made to store the material above ground and under cover. A good faith effort on the part of the supplier will be made to include only rinsed bottles which have closures removed.

Definitions for Plastic Materials

Baled

Loose material that is compressed and bound together.

Densified

Material that is compressed through mechanical means. Typically applies to foam (purged) and film (turned into "popcorn"). Densified material is typically sent on for additional processing.

Durable Goods

Electrical and electronic equipment, appliances, automobiles (called "transportation equipment" in ISO 15270), construction products (included in ISO 15270) and industrial equipment (included in ISO 15270)

Flake

A generic term that refers to size and shape. Typically consists of plastic bottles or plastic film typically ground into a chip.

Installed

Material that has been purchased by a consumer and used for its original purpose. Such material may be scrap from the installation process. The material may have reached the end of its serviceable life and has been removed from service. In distribution center or worksite environments, the packaging has been opened and exposed to environmental conditions causing a higher likelihood of contamination. This material can also be categorized as "post-consumer."

Mixed Load Plastic

Shredded plastic that contains various types of resins and requires mechanical sorting to reach final specification. Typically baled and not granulated. Types and grades included in the bale to be agreed to by buyer and seller.

Plastic Bottle

A rigid container which is designed with a neck that is smaller than the body. Normally used to hold liquids and emptied by pouring.

Plastic Film

A thin flexible sheet which does not hold a particular shape when unsupported.

Postconsumer

Products generated by a business or consumer that have served their intended end use and have been separated or diverted from the solid waste stream for the purpose of recycling.

Purge

Plastic that has been melted and has hardened. This material has no set shape or form.

Recovered Plastic

Plastic materials which have been recovered or diverted from the solid waste stream. Does not include materials generated from and commonly reused within an original manufacturing process.

Recycled Plastic

Plastics composed of either post-consumer or recovered material or both.

Regrind

A generic term that refers to hard rigid plastic typically ground into a chip. Typically consists of material that is the same grade, color and type. It can be used in extrusion or molding processes.

Rigid Plastic Container

A package (formed or molded container) which maintains its shape when empty and unsupported.

Shred

Size reduced material. The typical upper size can be between 3" to 12", although in some cases the upper size can be as small as about 1". Size range, characteristics should be agreed to between buyer and seller.

Shredded Plastic

Generic term. Material that contains a high plastic content. Typically contains 90% plastic content.

Shredder Residue

The remaining mixture after the majority of metals have been recovered from durable goods "shred." The mixture can contain plastics, rubber, wood, glass, rocks, dirt, paper, film, textiles, wires and other metals missed during the metal recovery process. The predominant single material is often plastic, which can vary from about 15% to about 90% depending on the type of durable goods and the steps taken in the metal separation process. Size range, characteristics should be agreed to between buyer and seller.

Uninstalled

Can be found in multiple environments such as worksite, distribution centers or OEM facilities. The material has not been used due to a defect or other circumstance. It can be obsolete or surplus material. Material is that recovered from the distribution chain can also be categorized as "post-consumer." Material recovered before the distribution chain can be categorized as "pre-consumer."

Common issues for this category:

The following list applies to all materials listed in this category.

- Caps, enclosures, and labels are acceptable.
- Product need not be washed, but preferred.

PET Bottles

Description: Any whole Polyethylene Terephthalate (PET, #1) bottle with a screw-neck top that contains the ASTM D7611 "#1, PET or PETE" resin identification code and that is clear, transparent green, or transparent light blue. All bottles should be free of contents or free flowing liquids and rinsed.

Product: PET Bottles

Source: Post-Consumer Material

Contamination: Please check with your pet buyer(s) as to their allowances for:

- Other Colored PET Containers
- PET Thermoforms, e.g., microwave trays ,dishes, bakery trays, deli containers, clam shell containers, drink cups

PET Bottle Bale Grade Chart

PET Bale Grade	Grade A	Grade B	Grade C	Grade F
Total PET Fraction by Weight	>94%	93% to 83%	82% to 73%	<72%
Total Amount of Contamination Allowed	6%	7% to 17%	18% to 27%	>28%

"PET fraction" refers to the total weight of PET bottles in a PET bale, inclusive of caps and labels when still attached to PET containers, as a percentage of the total weight of that bale.

Including closures (caps, lids, and rings) on bottles is acceptable. Removal of closures is also acceptable.

Total contaminants should not exceed the percentages, by weight, as defined by PET bale grades in chart above.

- High-Density Polyethylene (HDPE, #2) Rigid Plastic Containers
- Low Density Polyethylene (LDPE, #4) Rigid Plastic Containers
- Polypropylene (PP, #5) Rigid Plastic Containers
- Aluminum
- Metal containers or cans
- Paper or cardboard
- Liquid residues, primarily water (2% maximum allowed)

The following contaminants are not allowed at any level (zero percent allowed)

- Polyvinyl Chloride (PVC, #3) in any form
- Chemically incompatible low temperature melting materials, including Polystyrene (PS, #6) plastic and PLA plastic, as rigid or foam in any product.
- Chemically compatible low temperature melting materials, such as PETG
- Any plastic bags or plastic film
- Wood, glass, oils and grease
- Rocks, stones, mud, dirt
- Medical and hazardous waste
- Items containing degradable additives

General: Refer to the General Information section for additional information.

HDPE Color Bottles

Description: Any whole, blow-molded, High-Density Polyethylene (HDPE, #2) bottle containing the ASTM D7611 “#2, HDPE” resin identification code that is pigmented and opaque, and was generated from a curbside, drop-off, or other public or private recycling collection program. All bottles should be free of contents or free flowing liquids and rinsed.

Product: Bottles Only.

Source: Post-Consumer material

Contamination: Total contaminants should not exceed the percentages, by weight, as defined by the HDPE bale grade chart listed below.

HDPE Bale Grade Chart

HDPE Bale Grade	Grade A	Grade B	Grade C	Grade F
Total HDPE Fraction by Weight	>95%	94% to 85%	84% to 80%	<79%
Total amount of contamination allowed	5 %	6% to 15%	16% to 20%	21%

“HDPE Fraction” refers to the total weight of HDPE bottles in a HDPE bale, inclusive of caps and labels when still attached to HDPE containers, as a percentage of the total weight of that bale

Including closures (caps, lids, and rings) on bottles is acceptable. Removal of closures is also acceptable.

No more than 2% of the following individual items are allowed :

- Polyethylene Terephthalate (PET, #1)
- Low Density Polyethylene (LDPE, #4)
- Polypropylene (PP, #5)
- Polystyrene (PS, #6)
- Other (#7)
- Liquid residues
- Aluminum
- Paper or cardboard

The following contaminants are not allowed at any level (zero percent allowed)

- Bulky rigids
- Any plastic with PLA or foaming agents
- Plastic bags or film
- Polyvinyl Chloride (PVC, #3) plastic in any form
- High-density Polyethylene (HDPE, #2) motor oil or other automotive fluid containers
- Metal
- Rocks, stones, mud, dirt
- Wood, glass, oils, grease
- Medical and hazardous waste

General: Refer to the General Information section for additional information.

Tubs and Lids

Description: Any whole Polypropylene (PP, #5), High-Density Polyethylene (HDPE, #2), and/or Low Density Polyethylene (LDPE, #4), container generated through a positive sort from curbside, drop-off or other public or private recycling collection program. Tubs are containers that have a neck or mouth similar in size to its base. Lids

are caps for tubs that have a fastening feature other than threads. Examples include: yogurt cups, margarine tubs, ice cream tubs, cold drink cups (transparent, cold serve).

Product: Tubs and Lids

Source: Post-Consumer material generated from a curbside, drop off, or other public or private recycling collection program.

Contamination: Total contaminants should not exceed 10% by weight

The following levels of contamination are allowed:
2% Maximum acceptable

- Metal;
- Paper/cardboard;
- Injection-molded High-Density Polyethylene (HDPE, #2);
- Polyethylene Terephthalate (PET, #1) Bottles or thermoforms);
- Any plastic containers or packaging including Polyethylene Terephthalate (PET, #1), Polyvinyl Chloride (PVC, #3), Polystyrene (PS, #6), Other (#7);
- Liquid/other residues.

The following contaminants are not allowed at any level (zero percent allowed)

- Any plastic bags, sheets, or film;
- Wood, glass, electronics scrap;
- Oils, grease, rocks, mud, dirt;
- Containers which held flammable, corrosive or reactive products, pesticides or herbicides;
- Medical and hazardous waste;
- Products with degradable additives.

General: Refer to the General Information section for additional information.

Tubs and Lids w/Bulky Rigid Plastic

Description: Any whole Polypropylene (PP, #5), High-Density Polyethylene (HDPE, #2), and/or Low Density Polyethylene (LDPE, #4), container generated through a positive sort from curbside, drop-off or other public or private recycling collection program. Tubs are containers that have a neck or mouth similar in size to its base. Lids are caps for tubs that have a fastening feature other than threads. Bulky Rigid plastic is allowed. Examples include: yogurt cups, margarine tubs, ice cream tubs, cold drink cups (transparent, cold serve).

Product: Tubs and Lids

Source: Post-Consumer material generated from a curbside, drop off, or other public or private recycling collection program.

Contamination: Total contaminants should not exceed 10% by weight

The following levels of contamination are allowed:
2% Maximum acceptable

- Metal;
- Paper/cardboard;
- Injection-molded High-Density Polyethylene (HDPE, #2);
- Polyethylene Terephthalate (PET, #1) Bottles or thermoforms);
- Any plastic containers or packaging including Polyethylene Terephthalate (PET, #1), Polyvinyl Chloride (PVC, #3), Polystyrene (PS, #6), Other (#7);
- Liquid/other residues. (cont.)

The following contaminants are not allowed at any level (zero percent allowed)

- Any plastic bags, sheets, or film;
- Wood, glass, electronics scrap;
- Oils, grease, rocks, mud, dirt;
- Containers which held flammable, corrosive or reactive products, pesticides or herbicides;
- Items with circuit boards or battery packs;
- Medical and hazardous waste;
- Products with degradable additives.

General: Refer to the General Information section for additional information.

1-7 Bottles and SMALL Rigid Plastic

Description: Rigid plastic generated in a positive sort from a curbside, drop-off, or other public or private recycling program that does not separately sort any plastic bottles. Bales consist of all plastic bottles—no bottles should be removed from the mix prior to baling—and household containers (including thermoform packaging, cups, trays, clamshells, food tubs and pots.

- Bulky rigid plastic, greater than 5 gallons, should be avoided (e.g., drums, crates, buckets, baskets, toys, totes and lawn furniture);
- Bales should consist of 65% bottles.

Product: Bottle and non-bottle containers

Source: Post-Consumer Material

Contamination: Total contaminants should not exceed 5% by weight

- 2% maximum acceptable
 - o Paper/cardboard
- 1% maximum acceptable
 - o Metal
 - o Plastic bags, sheets, film
 - o Liquid or other residues

The following contaminants are not allowed at any level (zero percent allowed)

- Wood, glass, electronics scrap
- Oils, grease, rocks, mud, dirt
- Items with circuit boards or battery packs
- Containers which held flammable, corrosive or reactive products, pesticides or herbicides.
- Medical and hazardous waste
- Products with degradable additives

General: Refer to the General Information section for additional information.

3-7 Bottles and SMALL Rigid Plastic

Description: Rigid plastic items generated in a positive sort from a curbside, drop-off, or other public or private recycling programs from which the Polyethylene Terephthalate (PET, #1) and High-Density Polyethylene (HDPE, #2) bottles have been removed. Pre-picked plastic consists of non-PET and non-HDPE household bottles and all non bottle containers including thermoform packaging, cups, trays, clamshells, food tubs and pots, and all large rigid plastics, primarily Polyethylene and Polypropylene (PP, #5) (includes plastic crates, carts, buckets, baskets and plastic lawn furniture). Metal, as typically found in toys or bucket handles, should be removed when possible. Plastic items from construction or demolition should not be included in Pre-Picked bales.

- Bulky rigid plastic, greater than 5 gallons, should be avoided (e.g., drums, crates, buckets, baskets, toys, totes and lawn furniture)

Product: Bottle and non-bottle Containers

Source: Post-Consumer material

Contamination: Total contaminants should not exceed 5% by weight

- 2% maximum acceptable
 - o Metal
 - o Paper/cardboard (2% maximum acceptable)
- 1% maximum acceptable
 - o Liquid or other residues (1 % maximum acceptable)

The following contaminants are not allowed at any level (zero percent allowed)

- Any plastic bags, sheets, or film
- Wood, glass, electronics scrap
- Oils, grease, rocks, mud, dirt
- Containers which held flammable, corrosive or reactive products, pesticides or herbicides.
- Items with circuit boards or battery packs
- Medical and hazardous waste
- Products with degradable additives

General: Refer to the General Information section for additional information.

MRF Film

Description: Film collected and sorted at a MRF, typically generated from curbside collections consisting of HDPE grocery/retail bags, LDPE, or LLDPE films.

Product: Film

Contamination: Contaminants not to exceed 10% of loose paper, rigid plastics, non-ethylene film

Prohibited Items: NO food, trash, cans, glass, wood, oil, rocks, liquids, PET plastics, or PVC plastics.

General: Refer to the General Information section for more information.

HDPE Natural Bottles

Description: Any whole, blow-molded, High-Density Polyethylene (HDPE, #2) containing the ASTM D7611 “#2, HDPE” resin identification code that is unpigmented, and was generated from a curbside, drop-off or public or private collection program. All bottles should be free of contents or free flowing liquids and rinsed.

Product: Bottles only

Source: Post-Consumer material

Contamination: Total contaminants should not exceed the percentages, by weight, as defined by the HDPE bale grade chart listed below.

HDPE Bale Grade Chart

HDPE Bale Grade	Grade A	Grade B	Grade C	Grade F
Total HDPE Fraction by Weight	>95%	94% to 85%	84% to 80%	<79%
Total amount of contamination allowed	5 %	6% to 15%	16% to 20%	21%

“HDPE Fraction” refers to the total weight of HDPE bottles in a HDPE bale, inclusive of caps and labels when still attached to HDPE containers, as a percentage of the total weight of that bale

Including closures (caps, lids, and rings) on bottles is acceptable. Removal of closures is also acceptable. No more than 2% of the following individual items are allowed :

- Non-dairy pigmented High-Density Polyethylene (HDPE, #2) Bottles;
- Paper or Cardboard;
- Any other non-HDPE rigid plastic container;
- Liquid Residues;
- Packaging, including Polyethylene Terephthalate (PET, #1), Low Density Polyethylene (LDPE, #4);
- Aluminum
- Polypropylene (PP, #5), Polystyrene (PS, #6), Other (#7)
- Injection-molded High-Density Polyethylene (HDPE, #2) based cups, tubs, other wide-mouthed containers or non-bottle High-Density Polyethylene (HDPE, #2) materials.

The following contaminants are not allowed at any level (zero percent allowed)

- Pigmented white and yellow High-Density Polyethylene (HDPE, #2) milk jugs
- Bulky Rigids
- Any Plastics with PLA or Foaming Agents
- Wood, glass, oils, grease
- Rocks, Stones, Mud, Dirt
- Medical and Hazardous Waste
- Any plastic bags or film from any resin PVC (#3) in any form
- Metal

General: Refer to the General Information section for additional information

Mixed Bulky Rigids

Description: Any large rigid High-Density Polyethylene (HDPE, #2) and/or Polypropylene (PP, #5) plastic bulky item, created through a positive sort from curbside, drop-off or other public or private recycling collection program. Examples include: crates, buckets, baskets, totes, and lawn furniture. Metal such as axels and bolts should be removed. Buckets/pails with metal handles can be included.

Product: Bulky Rigid Plastic

Source: Post-Consumer material created from a positive sort from a curbside, drop-off or other public or private recycling collection program.

Contamination: This bale should not contain mixed #1-7 bottles or containers, toys with metal, drums, jugs (either HMW or 55 gallons) or Polyvinyl Chloride (PVC, #3).

Total allowed - 15% by weight.

- Any plastic items or packaging including Polyethylene Terephthalate (PET, #1), Polyvinyl Chloride (PVC, #3), Polystyrene (PS, #6) #7 Other (4% maximum acceptable) ;
- Metal (2% maximum acceptable);
- Liquid/other residues (2% max. acceptable);
- Wood (2% max);
- Paper/cardboard (2% maximum acceptable) ;
- Any plastic bags, sheets or film (2% max);
- Glass (2% max).

The following items are not allowed at any level (0% allowed):

- Oils, grease, rocks, mud, dirt;
- PS Foam and any other types of foam;
- Medical and hazardous waste;
- Products with degradable additives;
- Containers which held flammable, corrosive or reactive products, pesticides or herbicides;
- Electronics scrap and items with circuit boards or battery packs;

General: Refer to the General Information section for more information

PET Thermoforms

Description: Any whole Polyethylene Terephthalate (PET, #1) package labeled with the ASTM D7611 “#1, PET or PETE” resin identification code including and not limited to egg cartons, baskets, clamshell containers, cups, lids, cake domes, covers, blister pack without paperboard backing, tubs, deli containers, trays and folded PET sheet containers. All packages should be free of contents or free flowing liquids and rinsed. This grade does not include bottles and jars.

Product: PET Thermoform Plastic

Source: Post-Consumer material

Contamination: Including closures (caps, lids, and rings) on bottles is acceptable. Removal of closures is also acceptable.

Total contaminants should not exceed 5% by weight.

No more than 2% by weight of any of following individual contaminants will be allowed:

- Aluminum
- Metal containers or cans
- Loose paper or cardboard (cont.)

- Polystyrene
- PLA
- PVC
- PETG
- Liquid residues, primarily water (2% maximum allowed).

The following contaminants are not allowed at any level (zero percent allowed):

- Any plastic bags or plastic film
- Wood, glass, oils and grease
- Rocks, stones, mud, dirt
- Medical and hazardous waste
- Items containing degradable additives

General: Refer to the General Information section for additional information.

HDPE Injection Bulky Rigids

Description: Any injection grade #2 HDPE, typically found to be wide mouthed containers and/or oversized items generated through a positive sort from curbside, drop-off or other public or private recycling collection program. Examples include: carts, crates, buckets, baskets, lawn furniture, etc. Metal such as axels and bolts should be removed. Buckets/pails with metal handles are acceptable.

Product: Buckets, Pails, Oversized Rigid Plastics

Source: Post-Consumer Material

Contamination: The following levels of contamination are allowed

- 10% maximum acceptable
 - o Polypropylene (PP, #5)
- 4% maximum acceptable
 - o Polyethylene Terephthalate (PET, #1) plastics
 - o Polyvinyl Chloride (PVC, #3) plastics
 - o Low Density Polyethylene (LDPE, #4) plastics
 - o Polystyrene (PS, #6) plastics
 - o Other (#7)
- 2% maximum acceptable
 - o Metal
 - o Liquid or other residues
 - o Paper/cardboard

The following contaminants are not allowed at any level (zero percent allowed)

- Plastic bags, sheets, film
- Oil, grease, rocks, dirt
- Wood
- Glass
- Electronic scrap
- Medical and hazardous waste
- Products with degradable additives
- Containers which held flammable, corrosive or reactive products, pesticides or herbicides

General: Refer to the General Information section for additional information.

Polypropylene SMALL Rigids Plastic

Description: Any Polypropylene (PP, #5) whole bottle, container product, generated through a positive sort from curbside, drop off or other public or private recycling collection program. Examples include: prescription bottles, yogurt cups, margarine tubs, ice cream tubs, cold drink cups, microwaveable trays, tofu tubs, dishwasher safe storage containers, hangers, bottle cap enclosures, etc.

- Bulky Polypropylene (PP, #5) plastic items greater than 5 gallons, should be avoided (e.g., drums, crates, buckets, baskets, toys, totes, and lawn furniture).

Product: Polypropylene Containers

Source: Post-Consumer Material

Contamination: Total contaminants should not exceed 8% by weight

The following levels of contamination are allowed

- 2% Maximum acceptable
 - o Metal
 - o Paper/Cardboard
 - o Liquid or other residue
 - o High-Density Polyethylene (HDPE, #2)
 - o Any plastic container or packaging containing Polyethylene Terephthalate (PET, #1), Polyvinyl Chloride (PVC, #3), Polystyrene (PS, #6), Other (#7)

The following contaminants are not allowed at any level (zero percent allowed)

- Plastic bags, sheets, film
- Oil, grease, rocks, dirt
- Wood
- Glass
- Electronic scrap
- Medical and hazardous waste
- Products with degradable additives
- Containers which held flammable, corrosive or reactive products, pesticides or herbicides

General: Refer to the General Information section for additional information.

Polypropylene All Rigid Plastic

Description: Any Polypropylene (PP, #5) whole bottle, container product, generated through a positive sort from curbside, drop off or other public or private recycling collection program. Bulky Polypropylene (PP, #5) are items greater than 5 gallons, (e.g. buckets, crates, waste baskets, toys, and storage bins).

Examples include: prescription bottles, yogurt cups, margarine tubs, ice cream tubs, cold drink cups, microwaveable trays, tofu tubs, dishwasher safe storage containers, hangers, bottle cap enclosures, etc.

Product: Polypropylene Containers

Source: Post-Consumer Material

Contamination: Total contaminants should not exceed 8% by weight

The following levels of contamination are allowed

- 2% Maximum acceptable
 - o Metal
 - o Paper/Cardboard
 - o Liquid or other residue

- o High-Density Polyethylene (HDPE, #2)
- o Any plastic container or packaging containing Polyethylene Terephthalate (PET, #1), Polyvinyl Chloride (PVC, #3), Polystyrene (PS, #6), Other (#7)

The following contaminants are not allowed at any level (zero percent allowed)

- Plastic bags, sheets, film
- Oil, grease, rocks, dirt
- Wood, glass, electronic scrap
- Medical and hazardous waste
- Products with degradable additives
- Containers which held flammable, corrosive or reactive products, pesticides or herbicides

General: Refer to the General Information section for additional information.

1-7 Bottles and ALL Rigid Plastic

Description: Rigid plastic generated in a positive sort from a curbside, drop-off, or other public or private recycling program that does not separately sort any plastic bottles. Bales consist of all plastic bottles—no bottles should be removed from the mix prior to baling—and household containers (including thermoform packaging, cups, trays, clamshells, food tubs and pots, and bulky rigid plastic (e.g., drums, crates, buckets, baskets, toys, totes and lawn furniture).

Product: Bottle and non-bottle containers

Source: Post-Consumer Material

Contamination: Total contaminants should not exceed 5% by weight

- 2% maximum acceptable
 - o Paper/cardboard
- 1% maximum acceptable
 - o Metal
 - o Plastic bags, sheets, film
 - o Liquid or other residues

The following contaminants are not allowed at any level (zero percent allowed)

- Wood, glass, electronics scrap
- Oils, grease, rocks, mud, dirt
- Items with circuit boards or battery packs
- Containers which held flammable, corrosive or reactive products, pesticides or herbicides.
- Medical and hazardous waste
- Products with degradable additives

General: Refer to the General Information section for additional information.

3-7 Bottles and ALL Other Rigid Plastic

Description: Rigid plastic items generated in a positive sort from a curbside, drop-off, or other public or private recycling programs from which the Polyethylene Terephthalate (PET, #1) and High-Density Polyethylene (HDPE, #2) bottles have been removed. Pre-picked plastic consists of non-PET and non-HDPE household bottles and all non bottle containers including thermoform packaging, cups, trays, clamshells, food tubs and pots, and all large rigid plastics, primarily PE and PP (includes plastic crates, carts, buckets, baskets and plastic lawn furniture). Metal, as typically found in toys or bucket handles, should be

removed when possible. Plastic items from construction or demolition should not be included in Pre-Picked bales.

Product: Bottle and non-bottle Containers

Source: Post-Consumer material

Contamination: The following levels of contamination are allowed

- 5% Maximum acceptable
 - o Metal (2% maximum acceptable)
 - o Paper/cardboard (2% maximum acceptable)
 - o Liquid or other residues (1 % maximum acceptable)

The following contaminants are not allowed at any level (zero percent allowed)

- Any plastic bags, sheets, or film
- Wood, glass, electronics scrap
- Oils, grease, rocks, mud, dirt
- Containers which held flammable, corrosive or reactive products, pesticides or herbicides.
- Items with circuit boards or battery packs
- Medical and hazardous waste
- Products with degradable additives

General: Refer to the General Information section for additional information.

PE Retail Mix Film

Description: Any polyethylene bag and overwrap accepted by retailers from their customers or polyethylene stretch wrap or other film generated back of house may be included. Bags may be mixed color or printed and primarily High-Density Polyethylene (HDPE, #2) but are expected to include other polyethylene bags and LDPE/LLDPE overwrap. Films may be coded with ASTM D7611 resin identification code “#2, HDPE” and #4, LDPE”. All bag bundles should be free of free-flowing liquids.

Product: Mixed Film

Source: Post-Consumer material

Contamination: Total contaminants should not exceed 5% by weight.

- Non-polyethylene other plastics;
- Loose Paper;
- Strapping, twine or tape;
- Liquid residue (2% maximum).

The following contaminants are not allowed at any level (zero percent allowed)

- Medical and hazardous waste;
- Food waste;
- Wood;
- Glass;
- Oils and Grease;
- Rocks, stones, mud, dirt;
- Metallized labels or films;
- Multi-material pouches;
- Silicone coated film;
- Film with oxo or bio-degradable additives;
- PVDC layers;
- Acrylic coatings;

General: Refer to the General Information section for additional information.

LDPE Colored Film

Description: Any mixture of natural translucent Low Density Polyethylene (LDPE, #4) film and mixed color translucent Low Density Polyethylene (LDPE, #4) film with limited label contamination is acceptable. Films may be coded with ASTM D7611 resin identification code #4, LDPE. All film bundles should be free of free-flowing liquids.

Product: LDPE Colored Film

Source: Post-Consumer material

Contamination: Total contaminants should not exceed 2% by weight. No more than 2% by weight of any of following individual contaminants will be allowed:

- Non-polyethylene other plastics;
- Labels;
- Water.

The following contaminants are not allowed at any level (zero percent allowed)

- Medical and hazardous waste
- Wood
- Glass
- Oils and Grease
- Rocks, stones, mud, dirt
- Metallized labels or films
- Multi-material pouches
- Silicone coated film
- Film with oxo or bio-degradable additives
- PVDC layers

General: Refer to the General Information section for additional information.

LDPE Furniture Mix

Description: Any mixture of natural Low Density Polyethylene (LDPE, #4) film used for sofa overwrap, bubble wrap, mattress bag and Linear Low Density Polyethylene (LLDPE, #4) stretch film and polyethylene thin foam which is white and gray foam backed with LDPE film. Color contribution can be only from the white foam, gray foam backed with LDPE film, and blue mattress bags. The mass shall consist of 70% to 80% LDPE and/or LLDPE films and the remainder polyethylene foam. Films may be coded with ASTM D7611 resin identification code #4, LDPE. All film bundles should be free of free-flowing liquids.

Product: LDPE or LLDPE Film

Source: Post-Consumer material

Contamination: Total contaminants should not exceed 2% by weight. No more than 2% by weight of any of following individual contaminants will be allowed:

- Non-polyethylene other plastics;
- Labels;
- Water.

The following contaminants are not allowed at any level (zero percent allowed)

- Medical and hazardous waste
- Wood
- Glass
- Oils and Grease
- Rocks, stones, mud, dirt
- Metallized labels or films

- Multi-material pouches
- Silicone coated film
- Film with oxo or bio-degradable additives
- PVDC layers
- Acrylic coatings

General: Refer to the General Information section for additional information.

PE Clear Film

Description: Any mix of natural polyethylene, High-Density Polyethylene (HDPE, #2), Low Density Polyethylene (LDPE, #4) or Linear Low Density Polyethylene (LLDPE, #4) film,

PE Clear Film Description Variances

Grade B	Grade C
80% clear, up to 20% color, clean and Natural LDPE and/or LDPE films.	50% clear, 50% color, dry, LDPE or LLDPE Films

totaling at least 95% clear or natural polyethylene film is accepted. Films may be coded with ASTM D7611 resin identification code.

Product: Polyethylene film

Source: Post-Consumer or Post-Commercial material

Contamination: Total contaminants should not exceed 5% by weight.

- Pigmented polyethylene films
- Non-polyethylene other plastics such as strapping
- Labels,
- Liquid residue (2% maximum).

The following contaminants are not allowed at any level (zero percent allowed)

- Medical and hazardous waste
- Wood
- Glass
- Oils and Grease
- Rocks, stones, mud, dirt
- Metallized labels or films
- Multi-material pouches
- Silicone coated film
- Film with oxo or bio-degradable additives
- PVDC layers
- Acrylic coatings

General: Refer to the General Information section for additional information.

Agricultural Greenhouse Film

Films not used on the ground for agriculture or farming. Examples of which may be bale wrap, greenhouse films, dairy bags and bunker silo films which are polyethylene based.

Product: Film

Contamination: Contaminants not to exceed 20% of non-PE film, dirt, rocks, or moisture.

Prohibited Items: NO food, trash, cans, glass, wood, or oil

General: Refer to the General Information section for more information.

Agricultural Ground Cover Film

Any film collected after in field use. Examples of which may be mulch film and irrigation (drip) tubing which is polyethylene based.

Product: Film

Contamination: Contaminants not to exceed 50% of non-PE Film, dirt, rocks, or moisture.

Prohibited Items: NO food, trash, cans, glass, wood or oil.

General: Refer to the General Information section for more information.

Post-Consumer TPO Plastic Automotive Bumper Covers

Description: This grade consists of painted auto bumper covers removed from motor vehicles.

Product: Post-Consumer Auto Part

Source: Post-Consumer material generated by collision or refurbishment centers or automobile dismantlers.

Contamination: The following parts must be removed from the bumper cover: head lamps, tail lamps, grills, emblems, rub strips, reflectors, and any other components attached to the bumper. Everything attached to the bumper cover should be removed before baling. Contamination should be limited to small metal parts such as clips, bolts, and screws.

No TPU or RIM Plastic allowed.

General: Refer to the "General Information" section for more information.

Rigid PVC—Siding

Description: Typically consists of PVC siding used in residential applications. May contain PVC downspouts. Not all siding is PVC and may contain PE variants, which are typically molded. Recyclability and market value increases with additional color segregation.

Product: PVC Bale

Source: Installed or Uninstalled Material

Technical Information: Hardness Level > 65D. Rigid PVC does not contain plasticizer and will typically measure above 65 on the Shore D scale.

Explanation of the Shore Scale: Shore durometer measurement devices can be used to measure the indentation of a prescribed needle into the material. The test method conforms to ASTM D2240.

Contamination:

Prohibitives—Material not accepted at any level, 0% allowed.

- a. PET plastic of any form
- b. Insulation
- c. Medical and hazardous waste
- d. Lead or cadmium stabilized rigid PVC materials,
- e. Materials containing asbestos fillers or reinforcement.
- f. Used household soil or waste plumbing lines with visible bioresidue. (May have debris and paper)
- g. CPVC—should be separated and marketed separately—typically includes pipe and molded fittings and runners;

Contamination material allowed at small percentages:

- a. Plastics other than PVC such as HDPE, LDPE, PP, PS
- b. Foamed PVC
- c. Liquids
- d. Paper & Cardboard
- e. Ferrous and Non-Ferrous Metals

- f. Rocks, Stones, Mud, Dirt
- g. Wood, Glass, Oils, Grease

General: Refer to the General Information section for additional information.

Rigid PVC—Pipe

Description: PVC pipe that is round in shape and can be green, white, blue, purple and grey in color. Comes from installed and un-installed sources or scrap. Is mainly used in water plumbing applications. Care should be taken when compressing the bale as too much pressure will crush material and make identification and inspection difficult. Recyclability and market value increases with additional color segregation.

Product: PVC Bale

Source: Installed or Uninstalled Material

Technical Information: Hardness Level > 65D. Rigid PVC does not contain plasticizer and will typically measure above 65 on the Shore D scale.

Explanation of the Shore Scale: Shore durometer measurement devices can be used to measure the indentation of a prescribed needle into the material. The test method conforms to ASTM D2240.

Contamination:

Prohibitives—material not accepted at any level, 0% allowed.

- a. CPVC (typically gray electrical conduit)
- b. PET plastic of any form
- c. Medical and hazardous waste
- d. Lead or cadmium stabilized rigid PVC materials,
- e. Materials containing asbestos fillers or reinforcement.
- f. Used household soil or waste plumbing lines with visible bioresidue. (May have debris and paper)
- g. ABS

Contamination material allowed at small percentages:

- a. Plastics other than PVC such as HDPE, LDPE, PP, PS
- b. Foamed PVC
- c. Liquids
- d. Paper & Cardboard
- e. Ferrous and Non-Ferrous Metals
- f. Rocks, Stones, Mud, Dirt
- g. Wood, Glass, Oils, Grease

General: Refer to the General Information section for additional information.

Rigid PVC—Window Profiles

Descriptions: Typically consists of window and door frames. Sourced primarily from door and window manufacturers.

Product: PVC Bale

Source: Installed or Uninstalled Material

Technical Information: Hardness Level > 65D. Rigid PVC does not contain plasticizer and will typically measure above 65 on the Shore D scale.

Explanation of the Shore Scale: Shore durometer measurement devices can be used to measure the indentation of a prescribed needle into the material. The test method conforms to ASTM D2240.

Contamination:

Prohibitives—material not accepted at any level, 0% allowed.

- a. Loose rubber weather stripping
- b. Glass

- c. Metal
- d. PET plastic of any form
- e. Medical and hazardous waste
- f. Lead or cadmium stabilized rigid PVC materials,
- g. Materials containing asbestos fillers or reinforcement.
- h. Used household soil or waste plumbing lines with visible bioresidue. (May have debris and paper)
- i. CPVC—should be separated and marketed separately – typically includes pipe and molded fittings and runners;

Contamination material allowed at small percentages:

- h. Plastics other than PVC such as HDPE, LDPE, PP, PS
- i. Foamed PVC
- j. Liquids
- k. Paper & Cardboard
- l. Ferrous and Non-Ferrous Metals
- m. Rocks, Stones, Mud, Dirt
- n. Wood, Glass, Oils, Grease

General: Refer to the General Information section for additional information.

Flexible PVC

Description: Typically consists of molding, weather stripping, flexible tubing, purging, battery covers, medical tubing, auto decals, flexible films and sheeting. It is typically resistant to chemicals, non-porous and extruded. It can be found in long profiles and can be wound onto a reel.

Product: PVC Bale

Source: Post-Consumer or Post Industrial (including Pre-consumer)

Technical Information: Durometer Level less than 90A

Explanation of the Durometer Scale: Explanation of the Shore Scale: Shore durometer measurement devices can be used to measure the indentation of a prescribed needle into the material. The test method conforms to ASTM D2240. Flexible PVC is typically measured using the A scale.

Contamination:

Prohibitives—material not accepted at any level, 0% allowed.

- a. PET plastic of any form
 - b. Medical and hazardous waste
- Contamination material allowed at small percentages
- a. Plastics other than PVC such as HDPE, LDPE, PP, PS
 - b. Rigid PVC
 - c. Liquids
 - d. Paper & Cardboard
 - e. Ferrous and Non-Ferrous Metals
 - f. Glue, adhesives, sticky tape
 - g. Co-extruded materials
 - h. Reinforcement weaves and fabrics

General: Refer to the General Information section for additional information.

This page
intentionally
left blank

Guidelines for Electronics Scrap: ES-2018

Electronics Scrap

Commercial Guidelines for Electronics Scrap were developed to provide industry-wide quality standards. These standards will facilitate commodity transactions domestically and internationally. Transactions covering shipments to or from other countries may be in accordance with these standards and may be modified by mutual agreement between Buyer and Seller.

Electronic Scrap Definitions

The following E-Recycling definitions will facilitate a more consistent language for both domestic as well as international transactions.

“END-OF-LIFE ELECTRONIC PRODUCTS”

EOL Electronic Products are either obsolete for their intended purpose or no longer useful by the current user and lack any significant market value as an operational unit. These products are represented by any of the following categories of electronic products:

IT and telecommunications electronic equipment including:

- Centralized data processing:
 - Mainframes
 - Minicomputers
 - Printer units
- Personal computing:
 - Personal computers (CPU, mouse, screen and keyboard included)
 - Laptop computers (CPU, mouse, screen and keyboard included)
 - Notebook computers
 - Notepad computers
 - Printers
 - Copying equipment
 - Electrical and electronic typewriters
 - Pocket and desk calculators
 - Other products and equipment for the collection, storage, processing, presentation or communication of information by electronic means
 - User terminals and systems
 - Facsimile
 - Telex
 - Telephones
 - Pay telephones
 - Cordless telephones
 - Cellular telephones
 - Answering systems
 - Other products or equipment for transmitting sound, images or other information by telecommunications

Consumer electronic equipment including:

- Radio sets
- Television sets
- Video cameras
- Video recorders
- Eli-h recorders
- Audio amplifiers
- Musical instruments and other products or equipment for the purpose of recording or reproducing sound or images, including signals or other technologies for the distribution of sound and image by telecommunications

Toys, leisure and sports electronic equipment including:

- Electric trains or car racing sets
- Hand-held video game consoles
- Video games
- Computers for biking, diving, running, rowing, etc.
- Sports equipment with electric or electronic components
- Coin slot machines

Medical devices (except all implanted and infected products and radioactive components) including:

- Radiotherapy equipment
- Cardiology
- Dialysis
- Pulmonary ventilators
- Nuclear medicine
- Laboratory equipment or in-vitro diagnostics
- Analyzers
- Freezers
- Fertilization tests
- Other appliances for detecting, preventing, monitoring, treating, or alleviating illness, injury or disability

Monitoring and control instruments including:

- Smoke detectors
- Heating regulators
- Thermostats
- Measuring, weighing or adjusting appliances for household or as laboratory equipment
- Other monitoring and control instruments used in industrial installations (e.g. Irra control panels)

“E-Recycling”

E-Recycling is any process by which End-of-Life (EOL) electronic products which would otherwise become solid waste are collected, separated, reused or processed and returned to use in the form of raw materials or products.

“E-Demanufacturing”

Demanufacturing is the process of separating EOL electronic products (electronic materials) into metallic and non-metallic parts that can be reused or recycled.

“E-Dismantler”

Dismantler is a person who engages in the manual demanufacturing of EOL electronic products (electronic materials) to reuse or recycle components and commodities contained within.

“E-Dismantling”

Dismantling is the manual demanufacturing of EOL electronic products (electronic materials) to reuse or recycle components and commodities contained within.

“E-Processor”

Processor is a person who engages in the mechanical demanufacturing of EOL electronic products (electronic materials) to reuse or recycle various commodities contained within.

“E-Processing”

Processing is the mechanical demanufacturing of EOL electronic products (electronic materials) to recover various commodities contained within.

“E-Broker”

Broker is a person who engages in the buying, selling, and trading of electronic products (electronic materials) without demanufacturing.

“E-Brokering”

Brokering is the buying, selling, and trading of electronic products (electronic materials) without demanufacturing.

Electronics Scrap Metals—EM

Preface: The following metals specifications are directed to processing plants generating value-added commodities for consumers producing metal products. All the specifications below are subject to final terms and conditions as agreed between buyer and seller.

EM1—Eddy-Current (EC) Aluminum

Shall consist of the shredded aluminum fraction generated by EC separation of electronic products being predominately aluminum. Bulk density to be a minimum of 30 pounds per cubic foot (subject to terms between buyer and seller). Material may contain agreed-upon amounts of zinc and copper but shall not contain more than a total 5% maximum of nonmetallics, of which no more than 1% shall be rubber and plastics. To be free of excessively oxidized material and any sealed or pressurized items. Any variation to be sold by special arrangement between buyer and seller. Note: Refer to ISRI nonferrous specifications for Tweak or Twitch.

EM2—Eddy-Current (EC) Scrap

Shall consist of a combination of nonferrous metals that should be predominately aluminum but may contain statistically significant percentages of zinc or other nonferrous metals. Bulk density to be a minimum of 30 pounds per cubic foot and subject to terms between buyer and seller. Material to be bought/sold under this guideline shall be identified as EM2 with a number to follow indicating the estimated percentage of nonferrous metal (e.g., EM2-90 means the material contains approximately 90% nonferrous metal content). May also be screened to permit description by specific size ranges. Note: Refer to ISRI nonferrous specification for Zorba.

Note: Specifications for clean aluminum scrap produced by demanufacturing or pretreating EOL scrap prior to shredding can be found under ISRI Guidelines for Nonferrous Scrap. For aluminum streams that contain less than 85% aluminum, consult the general aluminum scrap specifications.

EM3—Circuitboards and Shredded Circuitboards From the Processing of End-of-Life Electronics

Shall consist of whole or shredded copper/precious metal-bearing populated or unpopulated circuitboards from the manual dismantling of electronic products. May also consist of shredded circuitboards from end-of-life electronic product processing systems with a maximum piece size of 2 inches. Maximum acceptable metal contamination: aluminum, 5%; ferrous, 2%; zinc, 2%; magnesium, 1%; and beryllium, 200 ppm. Other elements subject to agreement between buyer and seller. Maximum plastic content: 40%. Typically sold on an assay basis and classified into different categories denominated by the gold levels contained in the material. Major classifications are:

- 1) <50 grams per mt
- 2) <200 g/mt
- 3) >200 g/mt

EM4—Light Iron

Shall consist of whole No. 1 and whole No. 2 wrought iron and/or steel scrap and No.1 busheling from the manual dismantling of electronic products. Refer also to 200, 204, and 207 Guidelines for Ferrous Scrap.

EM5—Iron Frag

Shall consist of shredded No. 1 and No. 2 whole wrought iron and/or steel scrap and No. 1 busheling from end-of-life electronic product processing systems. Refer also to 210 and 211 Guidelines for Ferrous Scrap.

Electronics Scrap Glass and CRT Cullet Specifications

Shipping/Packaging/Labeling—All shipments shall be packaged, labeled, and transported in accordance with all applicable transportation laws and packed in a manner that prevents releases to the environment and protects the health and safety of workers handling the material at generating or receiving facilities.

Whole Monitors/TVs with or with cords. The equipment is intact with housing. Minimal to no disassembly has occurred.

Whole Intact Tubes with gun and vacuum intact or released and with or without the band.

Whole Tubes without gun and with or without the band.

Processed Tubes to include both funnel and panel glass. Particle size will be determined by contract between shipper and smelter or treatment facility. Material should be free of all loose metals, bands, and shadow masks. May or may not be cleaned prior to shipping.

Leaded Funnel Glass and Frit for smelting or other recovery/treatment. This material may include up to 10% panel glass. May or may not be cleaned prior to shipment. Particle

size will be determined by contract between shipper and smelter or treatment facility.

Panel Glass (minimal or lead free) for multiple uses including construction, sand blasting, art glass, etc. May or may not be cleaned prior to shipment. Particle size will be determined by contract between shipper and receiving facility.

Clean Panel Glass with metal oxide concentrations of less than 5 ppm, free of coatings.

Electronics Scrap Plastics

Applicable to all Specs:

- All specifications are subject to final terms and conditions as agreed to between the buyer and the seller
- Plastic should not contain hazardous materials, medical waste or free-flowing liquid
- Contamination includes: painted/coated; laminated; metals; dirt; and wood

Baled Specs:

Baled CRT TV Plastic

- From disassembled CRT TVs
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Baled Light Colored CRT Monitor Plastic

- From disassembled light colored (white, beige) CRT computer monitors
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Baled Dark Colored CRT Monitor Plastic

- From disassembled dark (black, dark grey) colored CRT monitors
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Baled Dark Colored Flat Panel Monitor Plastic

- From disassembled dark (black, dark grey) colored LED and LCD monitors
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Baled Dark Colored Printer Plastic

- From disassembled dark (black, dark grey) colored printers
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Baled Light Colored Printer Plastic

- From disassembled light (white, beige) colored printers
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Baled Dark Colored Mixed Electronics Plastic

- From disassembled dark (black, dark grey) mixed electronics equipment
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Baled Light Colored Copier Plastic

- From disassembled light (white, beige) colored copiers
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Baled Dark Colored Copier Plastic

- From disassembled dark (black, dark grey) colored copiers
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Baled Light Colored Mixed Electronics Plastic

- From disassembled light colored (white, beige) electronics equipment
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Baled Mixed Color Electronics Plastic

- From disassembled mixed (all colors) colored electronics equipment
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Shredded Specs:

Shredded CRT TV Plastic

- From shredded or disassembled TVs
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Shredded Light Colored CRT Monitor Plastic

- From shredded or disassembled light (white, beige) colored monitors
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Shredded Dark CRT Monitor Plastic

- From shredded or disassembled dark (black, dark grey) colored monitors
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Shredded Dark Electronics Plastic

- From shredded or disassembled dark (black, dark grey) colored electronics equipment
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Shredded Light Electronics Plastic

- From shredded or disassembled light (white, beige) colored electronics equipment
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

Shredded Mixed Color Electronics Plastic

- From shredded or disassembled mixed (all colors) colored electronics equipment
- 36,000 +/- pounds per 40 ft. HC or tractor trailer
- Maximum Contamination < or = 2.0% by weight

This page
intentionally
left blank

Guidelines for Tire Scrap: TS-2018

Rubber From Scrap Tires

General Guidelines

Items not covered in the specifications, and any variations in the specification are subject to special arrangement between Buyer and Seller. Percentages listed below are by weight.

Definitions

Fines consist of materials that pass a 4.75 mm sieve. These materials may include rubber, fiber, inorganic and organic matter, dirt, and other non-tire materials.

Sizes will be determined by sieving. Suitable sieve sizes will be selected. Nest the sieves in order of decreasing size of opening from top to bottom and place the sample on the top sieve. Agitate the sieves by hand or by mechanical apparatus for a sufficient period so that additional sieving does not result in substantial additional material passing through the sieves.

TDM refers to tire-derived material.

Rubber Primarily Used for Civil Engineering

TDM 2-A

All material must be smaller than 4";
at least 90% must be smaller than 2½";
at least 50% must be larger than ½";
at least 90% must be larger than ½";
maximum of ½" protrusion of steel; and
maximum of 1% fines.

TDM 2-B

All material must be smaller than 4";
at least 90% must be smaller than 2½";
at least 50% must be larger than ½";
at least 90% must be larger than ½";
at least 90% must not exceed 1" protrusion of steel; and
maximum of 5% fines.

TDM 2-C

All material must be smaller than 4";
at least 90% must be smaller than 2½";
at least 50% must be larger than ½";
at least 90% must be larger than ½"; and
maximum of 5% fines.

TDM 3-A

At least 90% must be smaller than 4";
at least 75% must be larger than ½";
at least 90% must be larger than ½";
maximum of ¼" protrusion of steel; and
maximum of 1% fines.

TDM 3-B

At least 90% must be smaller than 4";
at least 75% must be larger than ½";
at least 90% must be larger than ½";
at least 90% must not exceed 1" protrusion of steel;
and maximum of 5% fines.

TDM 3-C

At least 90% must be smaller than 4";
at least 75% must be larger than ½";
at least 90% must be larger than ½"; and
maximum of 5% fines.

TDM 5-A

All material must be smaller than 8";
at least 90% must be smaller than 6";
at least 50% must be larger than 3";
at least 90% must be larger than 1/2";
maximum of 1" protrusion of steel; and
maximum of 1% fines.

TDM 5-B

All material must be smaller than 8";
at least 90% must be smaller than 6";
at least 50% must be larger than 3";
at least 90% must be larger than ½";
at least 90% must not exceed 2" protrusion of steel;
and maximum of 5% fines.

TDM 5-C

All material must be smaller than 8";
at least 90% must be smaller than 6";
at least 50% must be larger than 3";
at least 90% must be larger than ½"; and
maximum of 5% fines.

TDM 8-A

At least 90% must be smaller than 12";
at least 75% must be smaller than 8";
at least 50% must be larger than 3";
at least 75% must be larger than ½";
maximum of 2" protrusion of steel; and
maximum of 1% fines.

TDM 8-B

At least 90% must be smaller than 12";
at least 75% must be smaller than 8";
at least 50% must be larger than 3";
at least 75% must be larger than ½";
at least 90% must not exceed 2" protrusion of steel;
and maximum of 5% fines.

TDM 8-C

At least 90% must be smaller than 12";
at least 75% must be smaller than 8";
at least 50% must be larger than 3";
at least 75% must be larger than ½"; and
maximum of 5% fines.

TDM 12-A

At least 90% must be smaller than 18";
at least 50% must be larger than 6";
at least 75% must be larger than ½";
maximum of 2" protrusion of steel; and
maximum of 1% fines.

TDM 12-B

At least 90% must be smaller than 18";
at least 50% must be larger than 6";
at least 75% must be larger than ½";
at least 90% must not exceed 2" protrusion of steel;
and maximum of 5% fines.

TDM 12-C

At least 90% must be smaller than 18";
at least 50% must be larger than 6";
at least 75% must be larger than ½"; and
maximum of 5% fines.

Guidelines for Metals Transactions

These Guidelines are intended as a reference to assist members in carrying out their business obligations in a manner consistent with accepted industry practices. While the Guidelines are not obligatory, it is suggested that potential problems and misunderstandings may often be avoided by following these recommended procedures, in conjunction with ISRI's scrap descriptions.

At times, the respective parties to a transaction may be unaware of the differences in trading practices of the other party. This diversity of interpretation often leads to misunderstandings, disputes, and in some instances expensive lawsuits. It is with the objective of providing members the means of avoiding such friction that ISRI has published these Guidelines, which are based on those practices most common and current in the industry.

On those points where it is impractical to provide recommendations, it is advised that the points be mutually agreed upon by the parties involved.

Part I: Guidelines for Contracts

A contract is an agreement between two or more parties to perform a legally enforceable act.

Therefore, all contracts should be in writing and set forth in **specific** terms. Before signing a contract, one should carefully read and understand all terms of it. No discrepancies or ambiguities should exist at the time the contract is executed. If you receive a contract with terms that are objectionable, you should immediately notify the other party in writing of your objections. An attorney should be consulted when legal advice is needed.

It should be kept in mind that if a dispute arises under a contract, and a court is called in to interpret its terms, certain general rules will be applied. First, contracts will be construed as a "whole," and specific clauses will be subordinated to the contract's general intent. Second, the courts will construe words according to their "ordinary" meaning unless it is clearly shown that they were meant to be used in a technical sense. Also, where provisions appear to be inconsistent, the courts will determine whether some of the provisions are printed (indicating a form contract), as compared to others which are written or typed. The latter kinds of provisions will prevail.

It should be remembered that where you and a Buyer (or Seller) have reached verbal agreement on a transaction, your failure to sign and return a contract which is sent to you in confirmation of that verbal agreement may not relieve you of the obligations of the terms and conditions enumerated in that contract.

These Guidelines were developed to cover routine transactions. It is essential that any unusual arrangements must be completely spelled out in a contract. With these factors in mind, the following list of items is enumerated as a **Check-**

list for you to follow, either in the construction of a contract, or for the review of another party's contract proposal. We cannot overemphasize the need for accuracy and specificity.

Checklist Items

(BE SPECIFIC AT ALL TIMES)

I. Parties to Agreement:

Indicate full name and address of Buyer and Seller. Include name of individual person or persons involved. Buyer's and Seller's signatures are fundamental.

II. Date of Contract:

- (a) Give date the initial agreement was reached
- (b) Give Contract Number.

III. Description of Material:

Use NF code names or clearly describe what is being traded. Any allowable quality variation to be so stated. Ex: "X percent moisture allowed" or "Minimum CU content to be X percent" or "X percent painted material allowed."

IV. Quantity:

State exact quantity expected and indicate allowable tolerances or minimum/maximum limitations. Ex. "40,000 lbs. (5% More/Less allowed)" or "38,000 to 42,000 lbs."

V. Packing:

State type of packing allowable and restrictions if such are required. Ex: "Bales not to exceed 60 inches"; "Bales not to exceed 3,500 lbs."

VI. Delivery:

Show complete address of shipping or delivery point, including where applicable, specific rail siding or junction, forwarding warehouse, and party to be notified. Ex: "FOB (Actual Point of Shipment) Chicago, Ill."; "FOB (Actual Point of Delivery) St. Louis, Mo."; "FAS Baltimore Container Yard"; "C&F Tokyo, Japan." If these details cannot be furnished at the time of writing of contract, it should state "shipping/delivery instructions to follow." State means of conveyance to be employed. State size and type of truck, rail car, container or number of shipments expected or permitted.

VII. Shipment:

Time allowed for shipment or delivery should be clearly stated. Ex: "Shipment by Jan. 15, 2008 LATEST"; or "Delivery by Jan. 15, 2008." Indicate at whose option, Buyer's or Seller's, shipment shall be made in time period stated.

VIII. Price:

State price per unit. Ex: "\$20.00/CWT"; "20.00 Cents/Pound"; "\$400.00/Net Ton"; "\$440.92/Metric Ton." and indicate where appropriate "Clean and Dry"; "Full Copper Content." If applicable, state exact processing, smelting, refining charge, or unit deductions for impurities. (Avoid the use of the word "penalties.")

IX. Payment:

Terms of payment should be explicit. Ex: "Net 30 days after shipment"; "Net 15 days after mill receipt." Avoid phrases such as "usual;" "Net 30;" "Net Cash." Documents required to effect payment to be clearly stated. Ex: "Bill of Lading"; "Invoice"; "Weight Certificate." State how payment shall be made. If there is discussion of compensation for delayed payments, it should be included in the contract. If Letter of Credit is called for as a means of payment, it is advisable that the terms to be included in the Letter of Credit also be stated in the contract. When applicable, contract should state whether Buyer or Seller is responsible for payment of taxes, duties, or any other levies to which a shipment could be subjected. Contract should state whether the Seller's or Buyer's weights shall govern the basis of settlement.

X. Assignment:

The contract may state whether the Buyer and/or the Seller has the right to assign the contract. If it does, it should emphasize that the obligation arising under the contract shall be equally binding on his assignee.

XI. Notice:

The Seller should specify how notice to be given under the contract should be received—i.e. by hand, by telegram, by certified or registered mail. One should also specify when notice is deemed to be received by the party to whom it is given.

XII. Disclaimer of Warranties:

Depending on the type of transaction, or the metal involved, the Seller may want to limit his liability by disclaiming any warranties of merchantability or of fitness for a particular purpose.

XIII. Default:

The contract should contain a provision setting forth the events which would result in a default of the contract. This provision might also contain a clause stipulating damages and/or setting forth available remedies (i.e. specific performance) in the event a default does, in fact, occur.

XIV. Force Majeure:

This item is related to the item of default, as indicated in paragraph XIII. Seller or Buyer may enumerate, either generally or specifically, what events (i.e. strikes, fires, accidents) constitute circumstances beyond its control and thereby absolve him/her of any liability for damages or delay.

XV. Non-Waiver:

The Seller or Buyer should state in the contract that his/her failure to insist upon strict performance in any given instance shall not be construed as a waiver or relinquishment for the future of any of the terms, covenants and conditions contained therein.

XVI. Claims:

The Seller may specify that any claims involved in a metals transaction for contaminated materials, weight shortage, or for any other cause is waived by the Buyer unless brought to the Seller's attention within a certain number of days after delivery.

XVII. Arbitration and Applicable Law:

The contract should set forth which state's or country's law will apply in the event of a legal dispute under the contract. It should also provide for arbitration procedure. (If ISRI Arbitration is desired, the contract should so stipulate.)

XVIII. Benefit:

The contract should stipulate on whom it is binding. For instance, the Seller or Buyer may want to specify that the contract inures to the benefit of the parties, their legal representatives, successors and assignees.

XIX. Entire Agreement:

This provision is especially important in the area of metals transactions, which frequently involve extensive preliminary negotiations. A clause may be inserted into the contract stating that the contract constitutes the parties' entire agreement and supersedes all prior agreements and understandings with respect to the subject matter of the contract.

XX. Modification:

A clause may be included in the contract stating that the contract's requirements can only be modified by a written instrument signed by the parties or their respective agents. This insures that the parties' informal discussions will not later be construed as affecting an alteration of the contract.

Part II: Packing, Weighing, Shipping and Receiving

It is recommended that strict adherence to contract terms will minimize many of the potential problems in this area. If there is a question about any item, one should communicate with his/her Buyer/Seller and clarify the situation prior to shipping. Listed below are some specific guidelines to be used in avoiding the most frequently reported problems.

Packing (All Shipments)**Seller's Responsibility:**

- a. Pack in the manner and form agreed. Example: In sound bales, briquettes, boxes, pallets, drums, loose, etc.
- b. Be sure that Buyer agrees with your definition of words and phrases, i.e. Bale, Briquette, Coil, etc. as well as allowed dimensions and weights of such.
- c. Material and packages should be securely tied or supported so that packages will hold in transit and normal handling.

Buyer's Responsibility:

- a. Advise Seller of any specific prohibitions, i.e. type or method of packing, size or weight of pieces, units or packages, etc.
- b. Be sure that Seller agrees with your definition of words and phrases, i.e. Bale, Briquette, Coil, etc., as well as allowed dimensions and weights of such.

Weighing, Shipping and Receiving (Truck Shipment)**Seller's Responsibility:**

- a. Each package should be individually weighed and the entire truckload should be checkweighed for comparison. Reconcile or explain any differences. If truck is

weighed during inclement weather or wind, make note of this on weight ticket.

- b. Trailers should be drop-weighed (both empty and loaded).
- c. All equipment should be inspected before loading, and cleaned or repaired where necessary to avoid loss or spillage.
- d. Open top trucks or trailers should be tarped or covered.
- e. Vans and closed trailers should be sealed and seal numbers indicated on all documents.
- f. If your customer requires appointments, make one in advance. Otherwise, as a courtesy, advise the Buyer of your anticipated delivery schedules.
- g. A complete manifest and packing list should accompany each shipment. This should clearly indicate the order number, items shipped, number and type of packages of each commodity, as well as the gross, tare and net weights of each package. This detailed information should be put into an envelope and attached to the inside wall of the truck or van. If this cannot be done, give a complete set of papers to the driver to deliver with the original Bill of Lading covering the shipment. At the very least, notify Buyer by telephone, telex or wire of these details on the day shipment leaves.
- h. Different lots should always be properly segregated and bulkheaded to avoid comingling. Each package should be tagged or marked to aid in proper identification and segregation at the receiving point.
- i. Be aware that someone at the delivery point will have to unload the shipment. Pay particular attention to door areas to assure that material is loaded safely. Proper care should be taken to insure that the material can be unloaded in a safe and expedient manner.

Buyer's Responsibility:

- a. If Seller requires appointment prior to pickup, make one in advance. Otherwise, as a courtesy, advise the Seller of your anticipated pickup schedule.
- b. Trailers should be drop-weighed (both empty and loaded).
- c. Carefully check shipment advices and compare package count, seal numbers, weights.
- d. **Prior to unloading**, if a significant* weight difference is apparent, the Seller should be notified promptly and, if requested, another weight should be taken to determine if spillage or theft might have occurred.
- e. **After unloading**, promptly advise Seller of any significant* differences between advised and actual weights, segregation, classification or quality. (Note: Refer to Part IV of the circular for recommended procedures in handling quality problems.)
- f. Truck or trailer should be completely unloaded including any spilled material which should be picked up, weighed and identified as spilled from original containers. Buyers should cooperate in every way to help minimize losses.

Weighing, Shipping and Receiving (Rail Shipment)

Seller's Responsibility:

- a. Each package should be individually weighed and the entire rail car should be checkweighed for comparison. Reconcile or explain any differences. If rail car is weighed during inclement weather or wind, make note of this on weight ticket.
- b. Railroad cars should be uncoupled and at rest (if possible) before weighing.
- c. All equipment should be inspected before loading, and cleaned or repaired where necessary to avoid loss or spillage.
- d. Railroad cars should be sealed and seal numbers indicated on all documents.
- e. A complete manifest and packing list should accompany each shipment. This should clearly indicate the order number, items shipped, number and type of packages of each commodity, as well as the gross, tare and net weights of each package. This detailed information should be put into an envelope and attached to the inside wall of the railroad car. If this cannot be done, mail a complete set of papers to the Buyer on the day shipment leaves.
- f. Different lots should always be properly segregated and bulkheaded to avoid comingling. Each package should be tagged or marked to aid in proper identification and segregation at the receiving point.
- g. Be aware that someone at the delivery point will have to unload the shipment. Pay particular attention to door areas to assure that material can be unloaded in a safe and expedient manner.

Buyer's Responsibility:

- a. Railroad cars should be uncoupled and at rest (if possible) before weighing.
- b. Carefully check shipment advices and compare package count, seal numbers, weights.
- c. **Prior to unloading**, if a significant* weight difference is apparent, the Seller should be notified promptly and, if requested, another weight should be taken to determine if spillage or theft might have occurred.
- d. **After unloading**, promptly advise Seller of any significant* differences between advised and actual weights, segregation, classification or quality. (Note: Refer to Part IV of the circular for recommended procedures in handling quality problems.)
- e. Rail car should be completely unloaded including any spilled material which should be picked up, weighed and identified as spilled from original containers. Buyer should cooperate in every way to help minimize losses.

Weighing, Shipping and Receiving (Export/Import Shipment)

Seller's Responsibility:

- a. Each package should be individually weighed and the entire container load should be check-weighed for comparison. If container is weighed during inclement weather or wind, make note of this on weight ticket.

- b. Container and chassis should be drop-weighed, if possible, both empty and loaded.
- c. Prepare and send to Buyer a complete manifest and packing list indicating the order number, items shipped, number and type of packages of each commodity, as well as the gross, tare and net weights of each package and the seal numbers.
- d. If shipment is against a Letter of Credit, pay strict attention to all terms.
- e. Place seals on all container doors and indicate seal numbers on documentation.
- f. Material and packages should be properly stowed and braced to prevent movement during shipment.
- g. Be aware that someone at the delivery point will have to unload the shipment. Pay particular attention to door areas to assure that material is loaded safely. Proper care should be taken to insure that the material can be unloaded in a safe and expedient manner.

Buyer's Responsibility:

- a. Container and chassis should be drop-weighed, if possible, both empty and loaded.
- b. Carefully check shipment advices and compare package count, seal numbers, weights.
- c. **Prior to unloading**, if a significant* weight difference is apparent, the Seller should be notified promptly and, if requested, another weight should be taken to determine if spillage or theft might have occurred. Seller should be given opportunity to appoint surveyor or representative to verify weights.
- d. **After unloading**, promptly advise Seller of any significant* differences between advised and actual weights, segregation, classification or quality. (Note: Refer to Part IV of the circular for recommended procedures in handling quality problems.)
- e. Container should be completely unloaded including any spilled material which should be picked up, weighed and identified as spilled from original containers. Buyer should cooperate in every way to help minimize losses.

*For purposes of this section, the meaning of the word "significant" shall be determined by agreement between Buyer and Seller, depending on the commodities and their values.

Part III: Transportation Guide

The mode and type of conveyance should be specified in the contract. If it has not been, then it is important that Buyer and Seller agree upon the mode and type to be used. These guidelines will assist in determining the appropriate means of transportation to employ.

A. Mode—Truck/Trailer

- 1. Type:
 - a. Dump
 - b. Removable sides
 - c. Van—open or closed
 - d. Dimensions of unit (20 ft., 40 ft., etc.)

- e. Determine if truck/trailer capacity meets minimum weight specified on contract.

B. Mode—Rail Car

- 1. Type:
 - a. Box car or gondola
 - b. Size of door opening, i.e. single or double door
 - c. Special type D.F., Hi-Cube, etc.
 - d. Dimensions of car (40 ft., 50 ft., 60 ft., etc.)
 - e. Determine if rail car capacity meets minimum weight specified on contract.

C. Export Shipments

- 1. Container:
 - a. Type of container, i.e. closed, open-top, flat rack, Hi-cube, etc.
 - b. Size of container (20 ft., 35 ft., 40 ft., 45 ft., etc.)
 - c. Determine if container capacity meets minimum weight specified on contract.
- 2. Breakbulk

Part IV: Rejections—Downgrades—Claims

A brief explanation of these items will help one understand and implement the procedures recommended in this section.

Rejections: Rejections can occur when a Buyer refuses to accept a shipment of material that does not conform to the description specified in the contract. Usually in such cases, the Buyer cannot utilize the material and the Seller is asked to remove the material from the Buyer's place of delivery. A rejection can occur prior to unloading, but often the cause of the problem cannot be determined until the material has been off loaded and graded. Any part, or all, of the shipment may be subject to rejection.

Downgrades: Downgrades can occur when all, or part, of the material in a shipment is not in conformity with the description specified in the contract. Often, in such cases, the Buyer can utilize the material and is willing to accept delivery of the material, subject to a price commensurate with its value.

Claims: This term is used mostly in export-import movements, and is used generically to encompass both **rejections** and **downgrades**, as well as **weight shortages**.

Strict adherence to contract terms can minimize the common causes of these difficulties. However, if a problem arises, it should be given prompt attention and settlement should be attempted as quickly as is practical. It is essential that both parties cooperate and keep communications open to minimize expenses and to preserve the relationship. Negotiations should not be conflicting but mutually beneficial and fair. Listed below are some recommended steps to be taken when a problem arises.

Domestic Shipments

Buyer's Responsibilities:

- a. In the event of a rejection Buyer must notify Seller immediately by telephone or telex. If Seller fails to

respond within two business days, Buyer may return material in most prudent manner. Subject to contract provisions, Buyer should promptly advise Seller concerning replacement of rejected material.

- b. In the event of a downgrade Buyer must notify Seller immediately by telephone or telex and afford Seller an opportunity to inspect the material prior to its use. If material is to be inspected by Seller or his/her representative, Buyer should agree to a mutually convenient time to do so.
- c. Buyer must give Seller option of removing material if he/she does not agree to downgrade. (All costs of unloading and reloading are for Seller's account.)

Seller's Responsibilities:

- a. In the event of a rejection Seller should respond promptly and advise Buyer of his/her intentions. Seller must reply within two business days. Subject to contract provisions, he/she must advise Buyer promptly concerning replacement of rejected material.
- b. In the event of an unacceptable downgrade Seller must advise Buyer within two business days if he/she wishes to inspect material and agree upon a mutually convenient time to do so.

- c. If Seller wishes to remove downgraded material from Buyer's delivery point, he/she must advise Buyer promptly. (All costs of unloading and reloading are for Seller's account.)

Export-Import Shipments

Buyer's Responsibility:

- a. In the event of a claim, time is of the essence and notification should be given to Seller within a reasonable period of time after arrival of vessel in receiving port.
- b. In the event of a claim, the material should be held intact until agreement has been reached. The acceptable portion of the material may be consumed and/or arrangements may be made to sample a portion of material, i.e., 10-25% with balance held intact pending resolution of claim.

Seller's Responsibility:

- a. In the event of a claim, Seller should respond to Buyer's notification promptly by telephone, telex, wire, or cable.
- b. When a claim settlement has been agreed upon, terms of settlement must be followed promptly.

Guidelines for Inbound Curbside Recyclables for Material Recovery

Facilities - Minimum Recommended Materials List

NOTE: The information provided by ISRI is for general guidance only and not for legal purposes. Anyone utilizing these Specifications or the Additional Materials which may be added to Curbside residential single stream and dual stream programs (below) is advised to consult with their legal counsel on all matters with respect to any particular situation involving contracts and agreements implied or written, or any other potentially litigious situations. The application and impact of laws can vary widely based on the specific locality and facts involved, and this document is not meant to be inclusive of all situations.

Materials accepted may be modified by mutual agreement between local governments, homeowner associations, and recyclables collectors (“buyer” of MRF separating, cleaning and marketing services) and Material Recovery Facilities (“Provider” of MRF services). For local purposes, parties to a local Residential recycling transaction may specify particular variations, additions or deletions, as are suited for their specific programs and for their individual convenience. Whatever is decided should be mutually agreed to and so stipulated in writing.

- The parties should use their own due diligence to insure that materials collected in Curbside Residential Single Stream or Dual Stream programs, and sold from MRFs after processing, consist of properly packaged materials suitable for recycling. Failure to maintain quality in residential recycling, and lack of diligence, are the chief reasons for problems arising from such programs.
- Arbitrary deductions, valuations, cancellations and/or rejections in MRF transactions are counter to acceptable good trade practices.
- Buyers will supply the agreed-upon quality of Curbside residential single stream or dual stream material into a MRF and shall not be responsible for the use of that material thereafter when sold for recycling if material is accepted by the seller of MRF services, unless such materials contain hazardous waste.

Paper/Acceptable Fiber (Acceptable)	Paper (not preferred or may be prohibited) with examples (not inclusive)
<ul style="list-style-type: none"> • All full-sheet office paper, white paper • Colored paper • Newspaper (plastic bags and strings removed) • Magazines (all types), catalogs (all types) • Phonebooks (all types) • Junk mail • Paperboard • Tissue boxes and tissue/towel rolls • Paper office folders • Paper towel and toilet paper rolls 	<ul style="list-style-type: none"> • Shredded Paper • Napkins • Tissue paper • Wall paper • Paper towels • Wax paper • Wrapping paper • Clean, dry double-polycoat food packages • Any paper which has the potential to be contaminated with bodily fluid
Cardboard (OCC) Acceptable	Cardboard (not preferred or may be prohibited) with examples (not inclusive)
<ul style="list-style-type: none"> • Paper Boxes- Packing boxes, corrugated liners, boxboard (i.e. shoeboxes, gift boxes, cereal boxes), • Brown or Kraft paper bags, brown wrapping paper, corrugated packing material. 	<ul style="list-style-type: none"> • Cardboard lined with plastic (i.e. bubble wrap boxes) • Waxed/waterproof cardboard. • Boxes containing food (i.e. contaminated boxes containing pizza, excessive oil, or cheese), excessive liquids, or other materials. Acceptable delivery boxes shall not contain any of these.

Cartons	Non Acceptable (Some Examples)
<ul style="list-style-type: none"> Food and Beverage Cartons- such as milk, juice, aseptics and broth (must be empty, clean and dry) 	<ul style="list-style-type: none"> Containers with moisture, other materials, or food residue still present, straws, etc.
Plastics Acceptable	Plastics (not preferred or may be prohibited) with examples
<ul style="list-style-type: none"> Plastics #1, #2, and #5 Bottles, jugs, jars, and containers; i.e. soda bottles, laundry detergent jugs, water bottles, milk jugs, and other household containers consisting of polyethylene terephthalate, high density polyethylene, and polypropylene Rigid Plastics- clean polyethylene plastics- toys, storage containers, file boxes, etc. (must be free of any other material) 	<ul style="list-style-type: none"> Film and film bags not specified in design of the recycling program. Shopping, Grocery, Retail bags and small Plastic “Baggies”. Plastic tableware- (#3, #4, #6, & #7 plastics, and in many cases #1, #2, and #5 plastics). Expanded polystyrene containers (EPS). Compound or layered multi-resin plastic receptacles.
Metals Acceptable	Metals (not preferred or prohibited) with examples
<ul style="list-style-type: none"> Aluminum and tin beverage and product containers (Food, beverage, and other containers’ materials must be completely empty of contents clean and dry) 	<ul style="list-style-type: none"> Metal containers with paper or plastic attached. Paint cans. Aerosol cans with liquids, propellants or pressure still in the can are prohibited. Metal containers with hazardous materials still in them are prohibited.
Glass Acceptable	Glass (not preferred or prohibited) with examples
<ul style="list-style-type: none"> Bottles and Jars only (materials must be dry and clean) with minimum breakage 	<ul style="list-style-type: none"> All glass types not listed in the “Glass Acceptable Section”, (window pane glass, leaded crystal, borosilicate glass, clear ceramic products, etc.).

PROHIBITIVES: Unacceptable in any quantity. Subject to Immediate Rejection due to Health, Safety or Product Suitability Concerns:

- E-waste and Electronics – such as Cell phones, iPad, iPods, any Computers, TV’s, wires, Controllers, Printers, Printer rolls, and other materials
- Radioactive Materials of any kind.
- Hazardous Materials – such as Oil, Paint, Antifreezes, Powders, free or attached Asbestos or Asbestos-containing products, and Fertilizers.
- Corrosives – such as Batteries, containers with Acid or Base Residue.
- Compressed Gas Cylinders and other containers holding or formerly containing Flammable, Pressurized or Combustible Materials such as fire extinguishers, Process vessels, bulk Storage Tanks, (see restrictions on aerosol containers above).
- Lead and other Heavy Metals.
- Other Hazardous Wastes – such as Pesticides, Poisons, used Oil filters, Mercury-containing materials such as Switches and Thermometers, Biohazards, Fluorescents Lights, Tube toss.
- Refrigerants – such as Freon/Puron/Substitutes, Compressors, Air Conditioners, Refrigerators, Freezers.
- PCBs – such as Capacitors, Transformers, Ballast.

- Explosives – such as Firearms, Ammunition, Shells, Fireworks, used Gasoline Cans.
- Medical Waste – such as Needles, Syringes, Biohazard-labeled Containers, etc.
- Biological waste of any kind- such as Animal carcasses, Infestations, Skins, Leather, Bones, Organs.
- Other Hazardous Materials which may harm human health or cause property/workplace damage.
- Any Materials containing human liquids or wastes- such as Diapers, Tissue, etc.
- Green wastes- Plant, Wood, Leaves, Fruits, Vegetables and other Vegetative matter.
- Inert construction materials- such as Rock, Dirt, Asphalts, Concrete, Debris, Roofing, Dry Wall, etc.
- Gross contaminants which reduce product value significantly or completely.
- Bulk and Gross Materials Not Recyclable through a MRF: such as Tires, Fiberglass, Wood, Asbestos, Appliances, Furniture, Ceramics, Rags, Air Bags, common Light Bulbs, Crystal, Plate & Mirror Glass, other Solid Wastes.
- Free Flowing Liquids of any kind.

Additional Materials

The goals of municipalities for establishing and maintaining curbside programs vary throughout the country. For various reasons such as mandates, policies, plant capabilities, customs, local markets (i.e. access to ocean export), and other factors, additional compatible materials may be collected in addition to the above materials for separation at material recovery facilities. The following chart offers ISRI's current guidance, which shall be updated from time to time as markets and conditions change, on the current pros and cons for each material for the majority of curbside programs in the U.S. ISRI reserves the right to change any opinion below as it receives feedback from its members and others in the industry. The opinions expressed do not necessarily apply to all circumstances and programs, but are guidelines in today's market. Notwithstanding the below, to be acceptable to material recovery facilities, all such materials, if accepted in a mixed recyclable curbside recycling program, should be subject to the same standards as the ISRI Inbound curbside material "Standards" above, in terms of Source-separation, Handling, Moisture, Health Size Suitability, Material Market Suitability, and Quality. A material is not recyclable unless there is a secondary non-landfill use or market for its consumption. Use of ISRI Scrap Circular specifications is recommended as a guide.

Material	Pros	Cons
#1 - #7 mixed plastics	<ul style="list-style-type: none"> • Markets do form regionally, locally, or export for mixed plastic bales. • Markets also fluctuate and can disappear with oil/resin prices changes. • Allows curbside programs to be permissive. 	<ul style="list-style-type: none"> • Only stable domestic markets are for #1, #2, and #5 plastics. • #1 - #7 mixed plastic bales are sometimes not marketable from some locations. • Generally, bales are made from all plastic materials entering the MRF, not just bottles (i.e., plastic tableware, straws, etc.) which may make them more difficult to sort for re-use. • Must assure brokered #1- #7 mixed bales, especially exports, do not go through secondary processing utilizing child or unfair labor

		<p>practices, or causes any environmental damage (i.e. open burning of residuals).</p> <ul style="list-style-type: none"> Yield from these bales may be limited after all costs of shipping and sorting are applied to #'s #1, #2, and #5 plastics.
<p>#3 - #7 Plastics</p>	<ul style="list-style-type: none"> Markets do form regionally, locally, or export for mixed plastic bales. Allows curbside programs to be permissive. 	<ul style="list-style-type: none"> Most volatile material baled in a MRF. While this grade is often sold as bales for secondary processing, usual materials recovered are #1, #2, and #5 plastics not recovered at the MRF. Some polystyrene resins are also being recovered. #3- #7 mixed plastic bales are not often marketable in down markets. Generally, bales are made from all plastic materials entering the MRF, not just bottles (i.e., plastic tableware, straws, etc.) which may make them more difficult to sort for re-use, especially after baling. Sellers must assure brokered #3- #7 mixed bales, especially exports, do not go through secondary processing utilizing child or unfair labor practices or causes any environmental damage (i.e. open burning of residuals). Yield from these bales may be very limited after all costs of sorting and shipping are applied. Generally, bales are made after the separation of #1, #2, and #5 bottles from all plastic materials entering the MRF, not just remaining bottles (i.e., plastic tableware, straws, etc.) which may make them more difficult to sort for re-use.
<p>#6 Polystyrene and Expanded Polystyrene (PS)</p>	<ul style="list-style-type: none"> Some states and local govt.'s target this material. New extruding technologies and processes, like air-classification to optical sorter, to PS extruder may offer better recovery than in the past at MRFs. 	<ul style="list-style-type: none"> Outside of rare pilot program instances, markets are scarce to non-existent for MRF-derived #6; The lightweight properties of EPS take long period of storage time to get to truckload quantities Test programs have high degree of failure so far.

Flexible Packaging	<ul style="list-style-type: none"> • Material over 1% of inbound flow at some MRFs. • May be recovered for energy value as a pellet. • May be recovered in bag-in-bag programs. • New technologies and processes are emerging for both sorting and emulsifying to separate polymers. 	<ul style="list-style-type: none"> • Not acceptable as a recyclable grade because of laminate properties and bounded chemistry of different layers presently. Only use is conversion. • Contaminates paper. • High food waste content. • Do not include in programs without tackling these issues.
Mixed household film (bagged in bag)	<ul style="list-style-type: none"> • A number of programs throughout the U.S. have added this commodity where residents stuff a plastic bag with household film ("bag in bag") • Can be used as pelletized or RDF fuel 	<ul style="list-style-type: none"> • Markets can be negative or prohibitive to non-existent with oil/resin fluctuations. • In most cases, cannot be exported. • Contamination can often be high. • Do not include in programs without tackling these issues.
Mixed household film in mixed recyclables ('pick-line film')	<ul style="list-style-type: none"> • Required by some programs and contracts • Can be used as pelletized or RDF fuel • Bags can store recyclables in some collection programs, i.e. New York City 	<ul style="list-style-type: none"> • Markets are marginal at best and can be non-existent for long periods. • Take back programs at grocery stores allow full recycling. • In most cases, cannot be exported. • Contamination is inherently high. • Residents often put good recyclables in bags causing belt to stop or loss of recyclables to occur. • Causes major screen wrapping, downtime and maintenance in material recovery centers. Contaminates paper. • Do not include in programs without tackling these issues.
Thermoform food or bakery containers (delicatessen, fresh food) clear- i.e. 'clamshells'	<ul style="list-style-type: none"> • Some markets limit the amount of #1, #2, and #5 thermoforms allowed. Check with local markets for limits or restrictions. 	<ul style="list-style-type: none"> • Some programs may not take them or be able to market them with PET bottles • Optical sorters cannot distinguish thermoform from bottle PET, HDPE, and PP, making QC difficult. • Downgrades for premium plastics occur in some markets • Some thermoform polystyrene containers cannot be distinguished

		manually from other thermoforms and can contaminate bales.
Thermoform PET food or bakery containers (clear top, black bottom)	Some markets limit the amount of #1, #2, and #5 thermoforms allowed. Check with local markets for limits or restrictions.	<ul style="list-style-type: none"> • Some programs may not take them or be able to market them together with PET bottles • In MRFs where hand-sorting occurs, sorters cannot distinguish PP from PS or polyethylenes • Some optical sorters cannot distinguish black bottom thermoform • Downgrades for premium plastics occur in some markets
Aluminum Foil	<ul style="list-style-type: none"> • Is acceptable in some export bales and very limited quantities in UBC. • Some programs on MRF residual recover Al foil 	<ul style="list-style-type: none"> • Hard to generate in a clean form from residential sources. • Many restrictive export countries will not take foil which has been used with food and could reject bales. • Foil disintegrates and flakes with age. If in small pieces, foil flashes in an aluminum furnace. • Foil can contain high moisture food/household oil waste, which can explode when introduced into a furnace. • Domestic markets can be less tolerant than export • Before accepting check with market.
Shredded Paper <1" diameter loose	<ul style="list-style-type: none"> • Is acceptable in some of curbside programs • Can be captured with some later technology MRFs through light fraction separation and optical sorting. • May be acceptable in Kraft bags in some mixed paper producing MRFs. 	<ul style="list-style-type: none"> • Does not get captured because of size recognition limitations at some MRFs and leaves MRFs as residue or in fines products like glass. • Holds moisture and raises content of moisture in paper bales and in glass. • Size of fiber strands makes it less recyclable.

ISRI Arbitration Service

ISRI established an arbitration service as a means to enable members to use arbitration to resolve disputes.

ISRI arbitration is a voluntary procedure and must be agreed upon by both parties in the dispute. It is not required that both parties to the dispute be ISRI members.

The complete procedure for arbitration is set forth in ISRI's "Rules for Arbitration," which are available from Association headquarters in Washington, D.C. The rules contain the necessary form that must be completed to initiate arbitration. ISRI treats all filings, awards, and proceedings as confidential.

The rules are highlighted below:

1. Anyone may propose arbitration in a dispute, though at least one party must be a member of the association. Both parties must agree to the arbitration by signing a "Submission to Arbitrate" form and agreeing to abide by the applicable Arbitration Rules.
2. A panel of arbitrators has been established by the association. The arbitrators serve without compensation, except for reasonable expenses. The arbitration parties must draw their arbitrators from the panel. A maximum of three arbitrators can be issued in any proceeding; the parties are encouraged to use a single arbitrator.
3. There is a specific schedule of fees listed in the "Rules for Arbitration." Each party must deposit with the association in advance \$500 plus \$500 for each arbitrator. The total deposit for each party thus is either \$1,000 or \$2,000, depending on whether one arbitrator is to be used or three. A portion of the fee is refundable if not required to defray arbitrators' costs. The arbitrators may require the losing party to reimburse the prevailing party for its share of these costs.
4. The arbitration procedure usually includes a hearing, at which time the parties involved are required to appear, present their respective cases, and be available for questioning by the arbitrator(s). All physical evidence (contracts, correspondence, relevant comments, etc.) may be required to be submitted in advance to the arbitrators. A party in the arbitration may be accompanied by counsel but must inform the other party in advance and receive permission from the arbitrators. Witnesses may also be called to an arbitration hearing. There is also an optional procedure for conducting the arbitration without an oral hearing.
5. An award by the arbitrator(s) will be made promptly, within 20 days after hearings have been completed or final briefs submitted. The award is made in writing.
6. The rules state that the parties to the dispute shall be deemed to have consented that a judgment upon the award be entered in any court having jurisdiction over an action to enforce the award.

Members who wish to provide an automatic basis for the settlement of any disputes arising from a transaction are encouraged to provide in their contracts that the ISRI Arbitration Procedure shall prevail in the event of any ensuing controversy and that each party will take all necessary steps to initiate such arbitration. Members are urged to obtain and carefully read the "Rules for Arbitration" before proceeding.

For more information, contact Robin Wiener, 202/662-8512 or rwiener@isri.org.