



Mueller Brass Co.

RAW MATERIAL SPECIFICATIONS

PURCHASED RAW MATERIAL

COPPER

Specifications:

Bare Bright

- ❖ Minimum 99.95% Copper
- ❖ Clean, untinned, uncoated, dry, oil free and unalloyed copper wire
- ❖ Wire under .050 must be briquetted or pucked
- ❖ Briq Size - maximum 24X24, no bales

No.1 Copper

- ❖ Minimum 99.5 % Copper
- ❖ Clean, untinned, uncoated, dry, oil free and unalloyed copper
- ❖ Copper Wire & Cable - minimum No.16 B&S wire gauge (.0508), including burnt, not brittle, wire
- ❖ Clippings & Punchings – dry in Gaylords only
- ❖ Buss Bar – clean-unplated maximum 3 feet long
- ❖ Commutator Segments
- ❖ Chopped Wire – in Gaylords only
- ❖ Green Wire – minimal amount acceptable, must be notified in advance.
- ❖ No totes or super sacks are permissible.
- ❖ Material is subject to rejection for contamination by excess free iron, non-metallic content, oil, grease, dirt, scale, corrosion, paint and other elemental impurities in excess of the limits below:

Aluminum (Al)	.010% max	Magnesium (Mg)	.001% max
Antimony (Sb)	.001% max	Manganese (Mn)	.050% max
Arsenic (As)	.002% max	Mercury (Hg)	.001% max
Beryllium (Be)	.001% max	Nickel (Ni)	.001% max
Bismuth (Bi)	.001% max	Phosphorus (P)	.005% max
Cadmium (Cd)	.001% max	Silicon (Si)	.001% max
Chromium (Cr)	.001% max	Sulfur(S)	.005% max
Iron (Fe)	.050% max	Tin (Sn)	.100% max
Lead (Pb)	.100% max	Zinc (Zn)	.250% max

Sum of unnamed elements may not exceed 0.025% and/or 0.01% individually

B Cu/Select No.2

- ❖ Minimum 98% copper – scrap nodules and chopped
- ❖ Tin-plated copper wire, chops, and cable – 16 AWG or thicker.
- ❖ Pucked copper chops – min. 4” diameter x 2” thick. Approved sample required.
- ❖ Tin and silver-plated buss bar – cut in Gaylords.
- ❖ Unplated copper Tuyeres and Bosch plates – clean and dry with all iron fittings removed.
- ❖ Briquetted copper – free of insulation, brittle wire, dirt, tar, paint. Approved sample required.
- ❖ Tin-plated clips and punchings – dry, in Gaylords. Approved sample required.
- ❖ Tubing – minimal solder and no line filters. Only one end may be crimped.
- ❖ Shredded material only by prior approval
- ❖ No “C” Chops accepted.
- ❖ No loose copper
- ❖ No Bales
- ❖ No totes or super sacks are permissible.

We do not accept enamel, fiberglass, or plastic-covered scrap. No radiator or heat exchanger material (fins or shredded), trolley wire, foils, powders, turnings, or saw chips are allowed. Material is subject to rejection for contamination by excess free iron, non-metallic content, oil, grease, dirt, scale, corrosion, paint and other elemental impurities in excess of the limits below:

Aluminum (Al)	.010% max	Magnesium (Mg)	.001% max
Antimony (Sb)	.002% max	Manganese (Mn)	.050% max
Arsenic (As)	.005% max	Mercury (Hg)	.001% max
Beryllium (Be)	.001% max	Nickel (Ni)	.050% max
Bismuth (Bi)	.005% max	Phosphorus (P)	.050% max
Cadmium (Cd)	.005% max	Silicon (Si)	.005% max
Chromium (Cr)	.005% max	Sulfur(S)	.005% max
Iron (Fe)	.100% max	Tin (Sn)	.200% max
Lead (Pb)	.100% max	Zinc (Zn)	.350% max

Sum of unnamed elements may not exceed 0.025% and/or 0.01% individually

ZINC

- ❖ Special High Grade, High Grade, and approved Prime Western brands.
- ❖ Must meet ASTM-E specifications
- ❖ Standard slabs banded on maximum 3,000 lb. pallets or in footed bundles.
- ❖ No scrap zinc.
- ❖ Maximum cadmium (Cd) shall be limited to .060 %

LEAD

- ❖ Corroding-grade primary or approved re-melt ingots strapped on pallets
- ❖ 40 lb. maximum ingot weight.
- ❖ Antimony (Sb) 0.25 %
- ❖ No scrap lead.

BRASS SCRAP – Accepted alloys

Certain guidelines are universal for the brass scrap we accept. We take no plated brass. Also, no castings, manganese or silicon bronzes, sintered (powdered) metals, fines, grindings, furnace drosses or excessively dirty or oily material. Please send samples when in doubt. Material is subject to rejection for contamination by excess free iron, non-metallic content, oil, grease, dirt, scale, corrosion, paint and other elemental impurities in excess of the limits below:

Aluminum (Al)	.010% max	Magnesium (Mg)	.007% max
Antimony (Sb)	.002% max	Manganese (Mn)	.030% max
Arsenic (As)	.010% max	Mercury (Hg)	.001% max
Beryllium (Be)	.001% max	Nickel (Ni)	.150% max
Bismuth (Bi)	.005% max	Phosphorous (P)	.050% max
Cadmium (Cd)	.007% max	Silicon (Si)	.007% max
Chromium (Cr)	.007% max	Lead (Pb)	3.70 % max
Iron (Fe)	.350% max	Tin (Sn)	.250% max

Sum of unnamed elements may not exceed 0.025% and/or 0.01% individually

Free Fe shall not exceed 0.40%

BRASS SCRAP

- Alloy 210 (95/5)** Gilding – unplated, dry, in Gaylords.
- Alloy 220 (90/10)** Commercial Bronze – unplated, dry, in Gaylords.
- Alloy 230 (85/15)** Red Brass – new production scrap solids only. No castings.
- Alloy 260 (70/30)** Cartridge Brass – clean, dry free-flowing solids, coreless coils on skids, plate or sheet strapped on pallets (max 32” x 32”). Stringy ribbon-like slitter strip and skeletons, or “fluffy” lightweight brass must be briquetted (24” sq. max).
De-tinned material per approved samples.
No condenser or radiator tubing, plastic or steel inserts, plastic film, or paper coating.
No steel drums
- Alloy 260 (70/30)** **Cartridge Shells:** Shipped ONLY with prior approval. MUST BE CERTIFIED AS CLEAN-FIRED AND POPPED. CERTIFICATION MUST ACCOMPANY EACH SHIPMENT. Blanket certifications received prior to shipment are permissible. Shipments arriving without certification will be subject to rejection of the entire load. No plated or fractured shells with powder residue is accepted.
- Alloy 270 (65/35)** Yellow Brass (see Alloy 260 above)
- Alloy 280** Muntz Metal – Plates cut no larger than 32” x 32”. Must be strapped on pallets with all fittings and tubing removed.

Note: Alloys 210, 220, 230, 260, 270 and 280 have the same compositional limits shown in the table above except lead is at 0.1% max.

BRASS SCRAP Continued

Alloy 345	Low-leaded (see Alloy 360 below)
Alloy 353	Key Stock – New production coreless coils strapped on pallets, dry skeletons and punchings in Gaylords – no turnings. No keys with plastic inserts.
Alloy 360	Free-Cutting Brass— No stringy turnings, spinnings, briquetted chips or solids mixed in turnings are accepted. All weight for oil, moisture, cutting compound, and other impurities will be deducted from the received gross weight. Maximum percentage of allowable oil/moisture is 4.5%. Turnings in boxes are subject to a \$0.01 / pound handling charge. No linings, plastic, cardboard, etc. No totes or super sacks are permissible. Solids (rod ends) must be put in drums or boxes at the REAR of the trailer. Material length – maximum 24 inches. Full-length rod taken with prior arrangement
Alloy 377	Forging Brass – forging flash accepted in boxes.

GENERAL INFORMATION

DELIVERY APPOINTMENTS

Metal deliveries MUST have an appointment date. Call the metal purchasing contact to make an appointment.

Shippers of record must coordinate all sub-shippers and their carriers. Customers should call Metal Purchasing or Customer Service to arrange for scrap pick-ups on Mueller Trucks.

DOCUMENTATION

Detailed documentation must accompany each shipment. Our Purchase Order number MUST appear on both the Bill of Lading and packing list. **No** "blind" shipping documents.

The packing list must include the number/type of packages of each commodity, along with separate gross, tare, and net weights. When tare weights are not identified, the following weights will be applied:

Tare Weights	lbs.
50 gal barrels/drums	34
Large boxes/pallet	84
Small boxes/pallet	36
Super Sacks	4
Wood skid	35
Steel trip hoppers	537
Zinc wood dunnage	90
Wood crates	50
Plastic Tote	150

Inadequate documentation is cause for rejection.

SHIPPING

Our plant and offices are located:

Port Huron

DO NOT SHIP TO 2199 LAPEER AVENUE.

Ship to:

300 Runnels St.

Port Huron, MI 48060

From Interstate 94 exit 274 (Water St.). Take Water east ½ mile to Runnels: turn right.

Truck interiors must be in good condition able to withstand the associated weight of unloading, and facilitate normal dock height and rear unloading. **52 ft. maximum trailer length** to allow for mechanical dumping of loose turnings. Our equipment cannot accommodate side-unloading, drop trailers, dump trailers, or roll-off boxes. Flatbeds with good side-kits acceptable. No liners on truck bed (e.g. plastic or cardboard). Trailers must be tarped.

All wood or other materials used to block and brace loads must remain on trailer to determine scale empty weight.

All trucks must pass through radiation detection devices at our scale (Port Huron). Additionally, material may be tested with a Geiger counter. Material displaying radiation levels in excess of 1 mR/hr. will be rejected, and shipper will be responsible for any personal injury and/or other damages.

Truck drivers are responsible for removing tarps, chocking wheels, and unhitching trailers if necessary. All shipments via flatbeds must be tarped: wet shipments will be rejected.

Mueller Brass is not responsible for detention or demurrage charges incurred while trucks wait to be unloaded, or during inspection and unloading. Inspection of turnings is a lengthy process; expect a minimum of 3 hours detention. We also cannot guarantee our ability to off-load all or part of any rejected shipment

PACKAGING (also see guidelines for individual alloys)

Each item on the trailer must be segregated and grouped together. Loose turnings must **ALWAYS** be in the nose of the trailer.

All solids must be packaged with different lots properly segregated and bulk headed to prevent mixing. Each container **MUST** be tagged with the Mueller Brass PO number, shipper name, and alloy. We reserve the right to charge an appropriate fee if we must tag your material for you.

Broken boxes, spilled barrels, etc., may be cause for rejection. Any material which spills from the truck due to poor packaging is the responsibility of the driver to clean up.

Incoming material must be accessible for inspection. Sealed containers (such as drum covers or nailed wooden box tops) will not be accepted. No material wound on paper, steel, or other cores.

Containers which contain residues of corrosive, toxic, EPA or DOT-defined hazardous materials, or have been used for such materials are unacceptable. The supplier of these containers will be held responsible for any damages incurred by them.

Gaylord boxes acceptable on sound pallets. No double-stacking. Boxes should have at least one belly-band, and have no splits, holes, plastic liners, or "shrink-wrap" covering. Material level must not extend above the top to the box. Each box must be labeled with vendor name, tare weight, gross weight, and appropriate description of the contents.

Maximum weight: 5,000 lb.

Drums or barrels are not acceptable.

Bales acceptable only with approval prior to shipment. Maximum bale dimensions shall be:

36" H x 36" W x 36" L.

ACCEPTANCE OF MATERIAL

Material acceptance is dependent upon final inspection. **Mueller weights, grading, and oil & moisture analysis govern.** Unloading of a truck does not imply acceptance. If, within a reasonable period of time after receipt of material, contamination is discovered, all or part of that shipment may be rejected. The supplier may be liable for any costs incurred from off-heats caused by scrap which varies from these specifications.

Mueller Brass may deviate from these specifications at their discretion.

INVOICING

Our standard payment terms are Net 45, with checks cut the first Friday 45 days following the date of receipt.

PLEASE SEND ALL INVOICES TO OUR PORT HURON OFFICE:

Email (preferred):

IPDInventoryInbound@muellerindustries.com Or Fax to:

810-989-4029 Attn: Jessica McDaniel

Or mail to: Mueller Brass

PO Box 5021

Port Huron, MI

48061-5021

CONTACTS

Call or email Metal Purchasing with questions, metal offers, or to schedule delivery appointments at rodmetals@muellerindustries.com.

We recommend you send samples of any questionable items. Please share these specifications with your shippers and carriers to avoid misunderstandings and potential rejections.