

**Americhem Engineered Compounds
Safety Data Sheet
Ecomass Compounds 1700CO Series**

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification

1(a) Product Identifier used on label

Ecomass Compounds: 1700CO Series
Form: Plastic Compound (Polyamide 12, PA12) & Metallic Powder Mixture (Pellets)

1(b) Other means of identification

Polycaprolactum

1(c) Recommended use of the chemical and restrictions on use

1. Uses: Thermoplastic for Injection Molding and Extrusion
2. Restrictions on Uses: None

1(d) Name, address, & telephone number of the chemical manufacturer, importer, or supplier

Americhem Engineered Compounds
20 Progress Drive
Morrisville, PA 19067 USA
215-736-1126

1(e) Emergency phone number

215-736-1126

SECTION 2: Hazard(s) Identification

2(a) Hazard Classification

(GHS-US): Not classified as a hazardous substance or mixture.

2(b) Label Elements

Signal Word: None
Pictogram: None
Hazard Statements: None
Supplemental Hazard Statement: Processing may release vapors and/or fumes which cause eye, skin, and respiratory tract irritation.

2(c) Hazards not otherwise classified

This material has not been evaluated as a whole. All ingredients are bound in a polymer matrix and potential for hazardous exposure as shipped is minimal. However, some fumes may be released upon heating and the end-user (fabricator) must take the necessary precautions (mechanical ventilation, respirator program, etc.) to protect his employees from exposure which may cause eye, skin, and respiratory tract infection. Prolonged or repeated exposure may cause: headache, drowsiness, nausea, weakness (severity of effects depends on extent of exposure). (See Section 8 - Exposure Controls / Personal Protection) The following ingredients are considered hazardous per OSHA 1910.1200:

1. Metallic Powder
2. Nuisance Dust

2(d) Ingredients with unknown toxicity

None

SECTION 3: Composition / Information on Ingredients

Products as manufactured are classified as non-hazardous and chemical disclosure is not required by regulation(s).

While not required, polymers and metal powders are described below with their CAS Number(s).

If a chemical is not specifically identified, it is considered proprietary.

Each copper powder particle is bound in a polymer matrix mixture and potential for hazardous exposure as shipped is minimal.

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

| Name | Product Identifier | % | Classification (GHS-US) |
|----------------------------|---------------------|-------|-------------------------|
| Nylon 12 (Polycaprolactam) | (CAS No) 25038-74-8 | < 100 | Not classified |
| Copper | (CAS No) 7440-50-8 | < 100 | Not classified |

SECTION 4: First Aid Measures

4(a) Description of First Aid Measures

After Inhalation: No known effects. Supply fresh air. Seek medical treatment.

After Skin Contact: No known effects. Flush contacted skin. If contact with molten product, immediately flush with cool water. Do not pull solidified product off skin. Seek medical treatment.

After Eye Contact: No known effects. Flush eyes with water. If contact with molten product, immediately flush with cool water. Seek medical treatment.

After Ingestion: No known effects. DO NOT induce vomiting. Seek medical treatment.

4(b) Most important symptoms and effects, both acute and delayed

Symptoms/Injuries: No known effects. Long term skin contact could cause skin dryness.

4(c) Indication of any immediate medical attention and special treatment needed

Treat symptoms as above. No specific antidote. Consult physician and/or seek medical treatment.

SECTION 5: Fire Fighting Measures

5(a) Suitable Extinguishing Media

Water spray, Carbon dioxide (CO₂), Alcohol-resistant Foam, or Dry Chemical. For large fires use foam, water spray and call for fire-fighting assistance.

Unsuitable Extinguishing Media

Do not use a solid water stream, as it may scatter and spread fire.

5(b) Specific hazards arising from the substance or mixture

Fire hazard: Not flammable but will burn and the following hazardous products of combustion can occur: Carbon Oxides, Nitrogen Oxides (Nox).

Explosion hazard: Static charge buildup can be a potential fire hazard when used in the presence of volatile, flammable vapors or in high airborne dust concentrations.

Reactivity: Non-reactive.

5(c) Advice for Fire Fighters

Precautions: Use standard protective clothing for fire fighters. Self contained breathing apparatus (SCBA) should be worn to prevent inhalation of smoke and decomposition products in the event the material should burn. Decontaminate fire fighting equipment after use.

SECTION 6: Accidental Release Measures

6(a) Personal precautions, protective equipment and emergency procedures

General measures: If spilled, may cause a fall or slipping hazard. Avoid dust generation. Keep away from ignition sources. Ensure proper ventilation.

Environmental: Prevent dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. Prevent entry to sewers and public waters.

6(b) Methods and material for containment and cleaning up

Containment: Prevent further leakage or spillage if you can do so without risk. Ventilate the area. Shovel, scoop, sweep up or use industrial vacuum cleaner and return to original container. Products are non-hazardous waste. Proper disposal should be evaluated based on local, state, and federal regulations/legislation or directives. Users must determine if a report is required to EPA for any amounts of this material disposed of or otherwise released into the environment.

References: Refer to Sections 7, 8, and 13.

SECTION 7: Handling and Storage

7(a) Precautions for Safe Handling

Prevent generation of dust and avoid breathing dust. If necessary, wear a dust mask. Avoid breathing processing fumes or vapors and use local exhaust above processing areas. Wash hands after use. Avoid eating, drinking and smoking in work areas. Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of material from eyes, skin, and clothing. Take precautionary measures against static discharge. Earth/Ground processing equipment. Product may accumulate static charge during transport, handling and processing. Considering the risks of electrostatic discharges, handling the products in potentially flammable atmospheres should be evaluated. Suitable precautions should be taken at all times, in particular when emptying bags or other packaging. Static charge buildup can be a potential fire hazard when used in the presence of volatile or flammable mixtures. Keep away from ignition sources. If product is processed into smaller particles, explosive hazardous conditions must be evaluated. When processing these products, read applicable Technical Data Sheet. Avoid processing material above recommended thermal processing temperatures.

7(b) Conditions for safe storage, including any incompatibilities

Stable under recommended storage conditions. Do not store outside. Keep container dry. Keep in a cool, dry, well-ventilated place. Store in tightly closed containers, in a secure area to prevent container damage and subsequent spillage. Store away from moisture and heat to maintain the technical properties of the product. Avoid storage under pressure or at elevated temperatures above to minimize particulate clustering. Do not store with alkalis, oxidizers, or acids.

7(c) Specific end use(s)

No additional information available.

SECTION 8: Exposure Controls / Personal Protection

8(a) Exposure Control Limits - Polyamide 6

| ACGIH TLV | Form - PNOG | Time Weighted Average |
|-----------|----------------------|-----------------------|
| | Inhalable Particles | 10 mg/m ³ |
| | Respirable Particles | 3 mg/m ³ |

| OSHA PEL Table Z-1 Air Contaminants | Form - PNOR | PEL |
|--|---------------------|----------------------|
| | Respirable Fraction | 5 mg/m ³ |
| | Total Dust | 15 mg/m ³ |

Exposure Control Limits - Copper

| ACGIH TLV | Form | TWA (Time Weighted Average) |
|-----------|-----------------------|-----------------------------|
| | Fume (as Cu) | 0.2 mg/m ³ |
| | Dust and Mist (as Cu) | 1 mg/m ³ |

| OSHA Table Z-1 Air Contaminants | Form | PEL (Permissible Exposure Limit) |
|------------------------------------|-----------------------|----------------------------------|
| | Fume (as Cu) | 0.1 mg/m ³ |
| | Dust and Mist (as Cu) | 1 mg/m ³ |

| NIOSH IDLH | Form | TWA (Time Weighted Average) |
|------------|-----------------------|-----------------------------|
| | IDLH | 100 mg/m ³ |
| | Fume (as Cu) | 0.1 mg/m ³ |
| | Dust and Mist (as Cu) | 1 mg/m ³ |

| Mexico OEL | Form | TWA (Time Weighted Average) |
|------------|----------------------------------|-----------------------------|
| | Fume (as Cu) | 0.2 mg/m ³ |
| | Dust and Mist (as Cu) | 1 mg/m ³ |
| | STEL (Short Term Exposure Limit) | |
| | Fume (as Cu) | 2 mg/m ³ |
| | Dust and Mist (as Cu) | 2 mg/m ³ |

| Canada OEL | Form | TWA (Time Weighted Average) | |
|------------|---------|-----------------------------|-----------------------|
| | Ontario | Fume (as Cu) | 0.2 mg/m ³ |
| | | Dust and Mist (as Cu) | 1 mg/m ³ |
| | Quebec | Fume (as Cu) | 0.2 mg/m ³ |
| | | Dust and Mist (as Cu) | 1 mg/m ³ |

8(b) Appropriate Engineering Controls

Use local exhaust ventilation during processing and secondary operations (cutting, regrinding, chopping, etc.) to reduce exposures. When transferring products, earth/ground all subsequent equipment to minimize charges that may develop.

8(c) Individual Protection Measures

Personal protective equipment:

Gloves. Safety Glasses. Protective Clothing.



Materials for protective clothing:

Standard issue work clothes, which may include apron, antistatic safety shoes or boots as necessary.

Eye protection:

Use good industrial practice to avoid eye contact. Wear Safety glasses with side-shields. Use a full-face shield when processing molten material. Processing of this product releases vapors or fumes which may cause eye irritation. Where eye contact may be likely, wear chemical goggles and have eye flushing equipment available.

| | |
|-------------------------|---|
| Skin: | Processing of this product releases vapors or fumes which may cause skin irritation. Minimize skin contamination by following good industrial hygiene practice. Wearing protective gloves is recommended. Use heat protective gloves when handling hot, molten product. Wash hands and contaminated skin thoroughly after contact with processing fumes or vapors or after handling the material. |
| Respiratory protection: | Avoid breathing dust. Avoid breathing processing fumes or vapors. During handling: if dust is generated, a particulate pre-filter is recommended and for high airborne dust concentrations, a cartridge designed for nuisance dust is recommended. During high temperature processing: use local exhaust ventilation when available. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134. |

SECTION 9: Physical and Chemical Properties

| | | |
|-------|------------------------------------|--|
| 9(a) | Physical state: | Solid |
| | Appearance/Form: | Pellets; porous to dense |
| | Color: | Various: tan, copper, gray or black - dependent on filler material |
| 9(b) | Odor: | Essentially odorless, may be faint odor |
| 9(c) | Odor threshold: | Not determined |
| 9(d) | pH: | No data available |
| 9(e) | Melting point/range: | 428 °F (220 °C) |
| | Freezing point: | Not Applicable |
| 9(f) | Boiling point: | Not Applicable |
| 9(g) | Flash point: | Not determined |
| 9(h) | Evaporation rate: | Not Applicable, Solid |
| 9(i) | Flammability (solid, gas): | See GHS Classification in Section 2 |
| 9(j) | Upper / Lower Flammability: | No data available |
| | Explosive Limits: | Not determined |
| 9(k) | Vapor pressure: | Not Applicable, Solid |
| 9(l) | Vapor Density: | Not Applicable, Solid |
| 9(m) | Relative density: | Specific Gravity: 1 - 6.5 |
| 9(n) | Solubility (water): | Insoluble |
| | Solubility (other): | Not Applicable |
| 9(o) | Partition Coefficient: | No data available |
| 9(p) | Auto-Ignition Temperature: | Not Applicable |
| 9(q) | Decomposition temperature: | Not Applicable |
| 9(r) | Viscosity, Kinematic: | Not Applicable |
| | Viscosity, Dynamic: | Not Applicable |
| Other | Oxidizing properties: | No data available |

SECTION 10: Stability and Reactivity

- 10(a) Reactivity:** Non-reactive. The product is stable under normal handling and storage conditions.
- 10(b) Chemical Stability:** Stable under ambient conditions. Hazardous polymerization does not occur.
- 10(c) Possibility of Hazardous Reactions:** Non-reactive. The product is stable under normal handling and storage conditions.
- 10(d) Conditions to Avoid:** Avoid prolonged exposure to heat or UV light since this may affect product properties. Product will burn when exposed to continuous sources of ignition. See Hazardous Decomposition below.
- 10(e) Incompatible Materials:** Avoid contact with strong acids, bases, and oxidizing agents.
- 10(f) Hazardous Decomposition:** Hazardous vapors from heated product are not expected to be generated under normal processing temperatures and conditions. No hazardous decomposition under ambient temperatures. Although highly dependent on temperature and environmental conditions, a variety of thermal decomposition products may be present if the product is overheated, is smoldering, or catches fire. Thermal decomposition giving toxic, flammable, and / or corrosive products: Carbon Oxides, Nitrogen Oxides (Nox).

SECTION 11: Toxicological Information

Polyamide 6

- 11(a) Routes of Exposure**
 - Aspiration hazard: Not classified
 - Skin corrosion/irritation: Not classified
 - Serious eye damage/irritation: Not classified
 - Respiratory or skin sensitization: Not classified
- 11(b) Symptoms** See Section 4
- 11(c) Effects - Short and Long Term**
 - Germ Cell Mutagenicity: Not classified
 - Carcinogenicity: Not classified; (No data available)

11(d) Toxicity

Toxicity Overview:

This product contains the following components which in their pure form have the following characteristics:

| CAS No. | Chemical | Effect | Target Organ |
|------------|--------------|------------------|---|
| 25038-74-8 | Polyamide 12 | None | |
| 7440-50-8 | Copper | Irritant | Respiratory System |
| | | Systemic Effects | Eyes, Skin, Respiratory System, Liver, Kidney |

Additional Health Hazard Information: None

- Acute Toxicity: No data available. LC50 Inhalation - mouse - 30 h - 11,000 mg/m³
- Reproductive Toxicity: Not classified; (No data available)
- Specific target organ toxicity (single exposure): Not classified; (No data available)
- Specific target organ toxicity (repeated exposure): Not classified; (No data available)

11(e) Listings

| | Polyamide 6 | Copper |
|-------------|-----------------------------|---------------|
| IARC Group: | Not listed or not regulated | Not Listed |
| NTP: | Not listed or not regulated | Not Listed |
| ACGIH: | Not listed or not regulated | Not Listed |
| OSHA: | Not listed or not regulated | Not Listed |
| Mexico: | Not listed or not regulated | Not Listed |

SECTION 12: Ecological Information

- 12(a) Ecotoxicity** Not expected to be toxic to aquatic or other organisms because of insolubility.
- 12(b) Persistence and degradability** Not expected to be biodegradable.
- 12(c) Bioaccumulative potential** Does not bioaccumulate.
- 12(d) Mobility in Soil** No data available
- 12(e) Other Adverse effects** No data available

COPPER

- 12(a) Ecotoxicity** Copper contains the following substances which are hazardous to the environment:

| | |
|------------------|---|
| Freshwater Algae | 0.031 - 0.054 mg/L EC50 96 h; 0426 - 0.0535 mg/L EC50 72 h |
| Freshwater Fish | 0.112 mg/L LC50 96 h; 0.8 mg/L LC50 96 h; 0.3 mg/L LC50 96 h; 1.25 mg/L LC50 96 h; 0.052 mg/L LC50 96 h; 0.2 mg/L LC50 96 h; 0.0068 - 0.0156 mg/L LC50 96 h |
| Microtox | Not listed |
| Water Flea | 0.03 mg/L EC50 = 48 h |
- 12(b) Persistence and degradability** Copper powder is bound within the polymer mixture so not readily degradable.
- 12(c) Bioaccumulative potential** Copper powder is bound within the polymer mixture so not readily available.
- 12(d) Mobility in Soil** Copper powder is bound within the polymer mixture so not readily available.
- 12(e) Other Adverse effects** No data available

SECTION 13: Disposal Considerations

Where possible, recycling is preferred to disposal or incineration. If recycling is not an option, incinerate or dispose of in accordance with federal, state, and local regulations. Pigmented, filled, and/or solvent laden product may require special disposal practices in accordance with federal, state, and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal, and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

SECTION 14: Transport Information

In accordance with DOT and IMDG, this product is not regulated for transport.

- 14(a) UN Number:** None
- 14(b) UN Number Shipping Name:** None
- 14(c) Transport Hazard Class(es):** None
- 14(d) Packing Group:** None
- 14(e) Environmental Hazards:** Not a marine pollutant
- 14(f) Transport in Bulk:** None
- 14(g) Special Precautions:** None

SECTION 15: Regulatory Information

US Federal Regulations

| | |
|---|--|
| SARA - Section 302 Extremely Hazardous Chemicals | |
| Unless specifically identified in this section, the components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations. | |
| None | |

| | |
|--|--|
| SARA - Section 311/312 Hazard Classes | |
| None | |

| SARA - Section 313 Toxic Chemicals | | | |
|---|--------------------|----------|-------------------------------|
| Unless specifically identified in this section, this material does not contain any chemical components with known CAS numbers that exceed the threshold (de minimis) reporting levels established by SARA Title III, Section 313. | | | |
| Name | Product Identifier | Weight % | SARA 313 - Threshold Values % |
| Copper | (CAS No) 7440-50-8 | < 100 | 1.0 |

| CERCLA - Comprehensive Environmental Response, Compensation, & Liability Act - Reportable Quantity (RQ) | | |
|--|--------------------------|----------------|
| Unless specifically identified in this section, the components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity. | | |
| Name | Hazardous Substances RQs | CERCLA EHS RQs |
| Copper | 5,000 lb | 1.0 |

| Clean Water Act | | | | |
|------------------------|-------|------------------|-------------|---------------------------|
| Component | CWA - | CWA - Reportable | CWA - Toxic | CWA - Priority Pollutants |
| Copper | - | - | Listed | Listed |

| | |
|-------------|--|
| OSHA | Unless specifically identified in this section, the components in this product are not considered hazardous by OSHA: |
| | Copper fumes and dust are classified as hazardous. |

Chemical Inventory Status

| | | |
|--|------------|----------|
| European Inventory of Existing Commercial Chemical | EU, EINECS | Conforms |
| United States TSCA (Toxic Substances Control Act) Inventory | TSCA | Listed |
| Canadian Domestic Substances List | DSL | Listed |
| China. Inventory of Existing Chemical Substances Produced or Imported in China | IECSC (CN) | Conforms |
| Japan. ENCS - Existing & New Chemical Substances Inventory | ENCS (JP) | Conforms |
| Korea. Toxic Chemical Control Law List | TCCL (KR) | Conforms |
| Philippines Inventory of Chemicals and Chemical Substances | PICCS (PH) | Conforms |
| Australian Inventory of Chemical Substances | AICS | Conforms |
| New Zealand Inventory of Chemicals | NZIoC | Conforms |

US State Regulations

| | CAS Number | Chemical Name |
|-----------------------------|--|---------------|
| Massachusetts Right to Know | 7440-50-8 | Copper |
| Pennsylvania Right to Know | 25038-54-4 | Nylon 12 |
| | 7440-50-8 | Copper |
| New Jersey Right to Know | 25038-54-4 | Nylon 12 |
| | 7440-50-8 | Copper |
| Illinois Right to Know | 7440-50-8 | Copper |
| Rhode Island Right to Know | 7440-50-8 | Copper |
| California Prop. 65 | This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm. | |

SECTION 16: Other Information

Revision Date: February 28, 2019

Version Number: 05

Ecomass® is a registered trademark.

ABBREVIATIONS / ACRONYMS / REFERENCES:

| | |
|----------|---|
| AND | EU Agreement for the International Transport of Dangerous Goods by Inland Waterways, as amended |
| ADR | EU Agreement for the International Carriage of Dangerous Goods by Road, as amended |
| CAS | Chemical Abstracts Services (Division of the American Chemical Society) |
| GHS | Globally Harmonized System of Classification and Labelling of Chemicals, as amended |
| HMIS | Hazardous Materials Identification System |
| IATA | International Air Transport Association |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Code for Dangerous Goods, as amended |
| LC50 | Lethal Concentration of 50 Percent of Organisms |
| MARPOL | International Convention for the Prevention of Pollutants from Ships, 1973, as amended |
| MHLW | Japanese Ministry of Health, Labor, and Welfare |
| NFPA 704 | National Fire Protection Association |
| OE | Oil Extended |
| OEL | Occupational Exposure Limit |
| RID | EU Standards Regulations Concerning the International Transport of Dangerous Goods by Rail |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |
| UN | United Nation |
| USP | United States Pharmacopeia for the Testing of Biological Endpoints for Medical Devices |

DISCLAIMER:

The information is based on present knowledge. This does not constitute a guarantee for any product features or specifications. It does not establish a legal contractual relationship. The information, data, and recommendations are made to our reasonable ability in good faith and obtained from reliable sources. Completeness is not guaranteed. It is intended to describe the products for the purpose of Health, Safety, and Environmental requirements only. The Safety Data Sheet is guidance for product uses. Advice applies to the products as originally supplied. Where other ingredients are added in the processing of these products, it is the users responsibility to evaluate or consult on their safe handling and use. It is the responsibility of the user to comply with all Local, Federal, and International Legislation and Local Permits when using. Further, since the conditions and methods of use are beyond the control of Americhem Engineered Compounds, Americhem Engineered Compouunds expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

We believe the information set forth in this document to be true and accurate, but any recommendations, statements, or suggestions made in the foregoing text are without any warranty or guarantee whatsoever, and shall establish no legal duty or responsibility on the part of the author(s) or their employer. Furthermore, nothing set forth above shall be construed as a recommendation to use any product in conflict with any existing patent rights.

Americhem Engineered Compounds for itself and the said author(s), expressly disclaims any and all liability for any damages or injuries arising out of any activities relating in any way to this publication. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety, and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.