TORQ-LOK® BRASS

1. Product Data

Date of Preparation: July 9, 2018
Product Name: BRASS ALLOY
Chemical Name: *Example*; 230; 260; 330; 360
Producer: Hohmann & Barnard, 30 Rasons Court, Hauppauge, NY 11788
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2. Hazards Identification

Brass alloys in their usual solid form and under normal conditions do not present an inhalation, ingestion, or contact health hazard or fire or explosion hazard. Operations such as welding, brazing, burning, grinding, cutting, heat treating, machining or similar operations may generate dusts, fumes and machine turnings that may create a health or fire or explosion hazard.

Routes of Entry: None in its natural solid state. High concentrations of dusts or fumes may cause irritation to the eyes. Inhalation of metal fumes or dusts generated during welding, burning, grinding or machining may cause irritations of the respiratory tract. Flu-like symptoms such as fever and chills may occur a few hours after excessive exposure. Dusts or fumes can cause irritation to the skin; and itching or dermatitis may occur.

Target Organs: Respiratory system, kidney, liver, central nervous system, eyes and skin.

Effects of Acute Exposure to Material:
COPPER & ZINC (as Oxide): Inhalation overexposure to copper or zinc oxide may cause metal fume fever characterized by fever and chills (i.e. flu-like symptoms) which appear 4-6 hours after exposure with no long term effects.

Effects of Chronic Exposure to Material:
LEAD: Chronic exposures may cause lead poisoning that can affect the digestive system, nervous system, reproductive systems, muscles and joints. IARC lists lead and its inorganic compounds under its Group 2B category - “possibly carcinogenic to humans”.

TIN: Inhalation overexposures may cause a benign pneumoconiosis (stannosis) with few or no symptoms, which is reported not to be disabling.

NOTES:

- International Agency for Research on Cancer (IARC) - Summaries & Evaluations (2008).
- 3rd Annual Report on Carcinogens as prepared by the National Toxicology Program (NTP).

3. Composition

Material	CAS Number	% Weight	TLV (ACGIH mg/m^3)	LD_{50}
BASE METAL				
Copper	7440-50-8	55-90	Dust - 1.0 Fume - 0.2	U
ALLOYING ELEMENTS				
Zinc	7440-66-6	Up to 45.0	2.0 (as Zinc Oxide - Respirable)	U
Tin	7440-31-5	Up to 4.0	2.0 (Metal or Oxide)	U
Lead	7439-92-1	Up to 2.0	0.05 (Elemental & Inorganic Compounds as Lead)	U

NOTE: The exposure limit for copper-containing fumes has been established at 0.2 mg/m^3 with ACGIH’s TWA. The individual complex compounds within the fume may have lower exposure limits than the general fume. ***All values are expressed as weight percent and are approximates.***

4. First Aid

Eyes: Flush eyes with plenty of water for at least 15 minutes, holding eye lids open. Seek medical attention if eye irritation persists.

Skin: Maintain good personal hygiene. Wash affected area with mild soap and water. Seek medical attention if skin irritation persists.

Inhalation: Remove to fresh air. Check for clear airway, breathing and presence of pulse. If necessary administer CPR. Consult a physician immediately.

Ingestion: Rare in industry. Dust may irritate mouth and gastrointestinal tract. If ingested, seek medical attention promptly.

5. Fire Fighting Measures

Flash Point: N/A
Auto-Ignition Temp: N/A
UL/EL Flammable Limits: N/A
Sensitivity To Static Discharge: N/A
Explosion Data (Sensitivity To Impact): No

Flammability Classification: Non-flammable. Will not support combustion.

Means Of Extinction: Not applicable for solid product. Use extinguishers appropriate for surrounding materials.

Hazardous Combustion Products: At temperatures above the melting point, fumes containing metal oxides and other alloying elements may be liberated.

Unusual Fire Hazards: Finely divided particles or dusts such as those produced during grinding may present an explosion hazard, and should be treated as a Class D combustible metal fire – use a use Class D fire extinguishers (dry powder or sand) for fires involving powders or dusts.

Special Fire Fighting: Do not use water on molten metal.

6. Accidental Release Measures

Not applicable to brass alloys in solid state. For spills involving fine dusts, remove by vacuuming or wet sweeping methods to prevent spreading of dust. Do not use compressed air to clean spills of dusts. Avoid inhalation of dusts. Collect spilled materials into suitable labelled containers for disposal.

7. Handling and Storage

Handling: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Practice good housekeeping. Avoid breathing metal fumes and/or dust.

Storage: Store away from oxidizers, acids and other incompatible materials.

8. Exposure Controls / Personal Protection

Engineering Controls: *(e.g. ventilation, enclosures)* General or local exhaust during welding, grinding or other dust generating operations.

Personal Protective Equipment: Dependent upon process being performed on material. Each operation must be evaluated and appropriate PPE worn.

Gloves: Wear gloves as required.

Eyes: Safety glasses or goggles as required.

Clothing: N/A

Footwear: N/A

Respirator: If concentrations exceed established limits (up to 10X TLV) use NIOSH/MSHA approved particulate respirators (dust & fume or high efficiency dust & fume cartridge) when grinding or welding.

9. Physical and Chemical Properties

Physical State: Solid
Appearance: Yellow-brown, metallic
Odor: N/A
Boiling Point: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Melting Point: 930°C (1706ºF)
Density: 8.4-8.8
pH: N/A
Evaporation Rate: N/A
Solubility: Insoluble
Coefficient Water/Oil Distribution: N/A

10. Stability and Reactivity

Stability: Stable under normal conditions.

Hazardous Polymerization: Will not occur.

Incompatibility To Other Substances: Oxidizers, acids, acetylene, some halogenated compounds.

Conditions Of Reactivity: Contact with oxidizers and/or strong acids will release flammable hydrogen gas.

Hazardous Decomposition Products: High temperatures can produce toxic metallic and/or metal oxide fumes (mostly Cu_2O & ZnO)

11. Toxicological Information

Irritancy Of Material: See Section 2.
Sensitization Of Material: N/A
LD_{50} of Material: Not established
LC_{50} of Material: Not established
Mutagencity Of Material: N/A
Reproductive Effects: N/A
Teratogenicity Of Material: N/A

Carcinogenicity Of Material:
LEAD: IARC lists lead and its inorganic compounds under its Group 2B category - “possibly carcinogenic to humans”.

Synergistic Materials: N/A

NOTE: Copper containing welding fume has an exposure limit of 0.2 mg/m³ (ACGIH-TLV's 2011). Welding fumes may also contain contaminants from fluxes or welding consumables. Prolonged skin contact may cause reddening and drying of skin or dermatitis in sensitive individuals due to nickel content in product

12. Ecological Information

Ecotoxicity: No data available for the material as a whole. However, individual components of the material have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife.

Environmental Fate: No data available.

Environmental Degradation: No data available

13. Disposal Considerations

Waste Disposal: Brass scrap or solid waste should be recycled or reclaimed whenever possible.

General Information: Dispose of in accordance with applicable federal, provincial/state or local regulations.

14. Transport Information

General Shipping Information: Material not regulated for shipping.

Transport Regulations:
US Department of Transport (DOT) Hazardous Materials shipping information (Title 49 - Transportation March 2011).

Canadian Transportation of Dangerous Goods Regulations (TDG) March 2011.

15. Regulatory Information

Regulatory Information: The following listing of regulations may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.

Additional U.S. Regulations:
SARA: The components of this material are subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA – Oct. 2006), as follows:

Regulation	Copper	Lead	Zinc
SARA 302 (40 CFR 355, Appendix A)	No	No	No
SARA 304 (40 CFR Table 302.4)	No	No	No
SARA 313 (40 CFR 372.65)	Yes	Yes	No
CERCLA Reportable Quantities	5000 lbs	10 lbs	1000 lbs

SARA Threshold Planning Quantity: There are no specific Threshold Planning Quantities for the components of this material. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb. (4,540 kg) therefore applies, per 40 CFR 370.20.

TSCA Inventory Status: The components of this material are listed on the Toxic Substances Control Act Inventory.

CERCLA Reportable Quantity (Rq): RQ's for Hazardous Substances in the Comprehensive Environmental Response, Compensation, and Liability Act are: Copper = 5,000 lb. (2,270 kg); Zinc = 1,000 lb (450 kg); Nickel = 100 lb. (45 kg); Lead = 10 lb (4.5 kg).

California (Proposition 65): The Nickel component of this material is known in the State of California to cause cancer. The Lead component of this material is known in the State of California to cause cancer, and/or birth defects (or other reproductive harm).

Other U.S. Federal Regulations: Lead is regulated under 29 CFR 1910.1025.

Additional Canadian Regulations:
Whmis Classification: This product is considered to be a manufactured article, however when product is subjected to welding, burning, melting, brazing, grinding or other similar processes, potentially hazardous airborne particulate and fumes may be generated and therefore subject to WHMIS requirements. Class D2A/D2B: Materials Causing Other Toxic Effects.

Domestic Substances List: The components of this material are on the federal DSL Inventory.

Additional European Union Regulations:
RoHS & WEEE: This SDS follows the European Union Directive "Restriction on the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment" (2002/95/EC) and the "Waste Electrical and Electronic Equipment (WEEE)" Directive (2002/96/EC).

Lead (Pb): Brass alloys may have a lead content of <2.0%, which is above the EU Directive limit of 0.1%

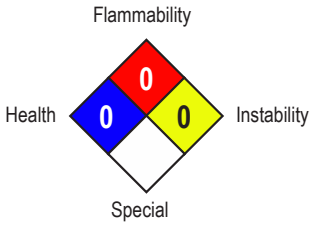
16. Other Information

Hazardous Material Information System (HMIS)

Health	1
Flammability	0
Reactivity	0
Personal Protection	*

* See Section 8

National Fire Protection Association (NFPA)



0 = INSIGNIFICANT 1 = SLIGHT
2 = MODERATE 3 = HIGH 4 = EXTREME

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