

LTS (CHEMICAL) INC.  
MATERIAL SAFETY DATA SHEET  
BRASS

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GENERAL  
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MANUFACTURER/SUPPLIER: LTS RESEARCH LABORATORIES, INC.  
DBA: LTS (CHEMICAL) INC.  
COMPANY'S STREET: 37 RAMLAND ROAD  
COMPANY'S CITY: ORANGEBURG  
COMPANY'S STATE: NEW YORK  
COMPANY'S ZIP CODE: 10962  
COMPANY'S EMERGENCY TEL. #: 845-494-2440 (LOCAL)  
COMPANY'S TEL #: 800-709-2802  
DATE MSDS PREPARED: 02/03/00  
DATE MSDS REVISED: 05/03/00  
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1. PRODUCT IDENTIFICATION  
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PRODUCT NAME: BRASS  
CHEMICAL NATURE: METALLIC COMPOUND  
CAS #: 7440-50-8  
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2. PHYSICAL AND CHEMICAL CHARACTERISTICS  
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BOILING POINT 760 mm Hg: NOT DETERMINED  
MELTING POINT: NOT DETERMINED  
SPECIFIC GRAVITY: NOT DETERMINED  
VAPOR DENSITY: N/A  
VAPOR PRESSURE (mm hg):: N/A  
% VOLATILES: N/A  
SOLUBILITY IN H<sub>2</sub>O: INSOLUBLE  
APPEARANCE AND ODOR: COPPER COLORED, POWDER, ODORLESS  
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3. HAZARD IDENTIFICATION  
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HARMFUL IF INGESTED OR INHALED. CAUSES IRRITATION, EYES, AND RESPIRATORY TRACT. AFFECTS LIVER AND KIDNEY

HAZARDOUS COMPONENTS %

COPPER 72%  
ZINC 27%  
ALUMINUM 1%

OSHA/PEL: 1 mg/m<sup>3</sup> (dust); 0.1 mg/m<sup>3</sup> (fume)  
ACGIH/TLV 0.05 mg/m<sup>3</sup> (dust); 0.2 mg/m<sup>3</sup> (fume)

HAZARD DESCRIPTION: XI IRRITANT  
F HIGHLY FLAMMABLE  
RISK PHRASES: 11 HIGHLY FLAMMABLE  
36/37 IRRITATING TO EYES AND RESPIRATORY SYSTEM.  
SAFETY PHRASES: 7 KEEP CONTAINER TIGHTLY CLOSED  
26 IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH  
PLENTY OF WATER AND SEEK MEDICAL ADVICE.  
33 TAKE PRECAUTIONARY MEASURES AGAINST STATIC DISCHARGES.  
60 THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF  
HAZARDOUS WASTE.

HMIS RATINGS (POWDER):

HEALTH: 1  
FLAMMABILITY: 2  
REACTIVITY: 1  
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4. FIRE FIGHTING MEASURES

FLASH POINT:	N/A
AUTOIGNITION TEMPERATURE:	N/A
FLAMMABLE LIMITS:	
UPPER:	N/A
LOWER:	N/A
EXTINGUISHING MEDIA (POWDER):	SPECIAL POWDER FOR METAL FIRES. DO NOT USE WATER.
SPECIAL FIRE FIGHTING PROCEDURES:	WEAR PROTECTIVE EQUIPMENT. KEEP UNPROTECTED PERSONS AWAY. ENSURE ADEQUATE VENTILATION. KEEP AWAY FROM IGNITION SOURCES.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	FIRE MAY RELEASE TOXIC METAL OXIDE FUME

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## 5. HEALTH HAZARD INFORMATION

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EFFECTS OF EXPOSURE:	TO THE BEST OF OUR KNOWLEDGE THE ACUTE AND CHRONIC TOXICITY OF COPPER IS NOT FULLY KNOWN. COPPER COMPOUNDS MAY BE IRRITANT TO THE SKIN, EYES AND RESPIRATORY TRACT. THEY MAY CAUSE METAL FUME FEVER, HEMOLYSIS OF THE RED BLOOD CELLS AND INJURY TO THE LIVER, LUNGS, KIDNEYS AND PANCREAS. INGESTION MAY ALSO CAUSE VOMITING, GASTRIC PAIN, DIZZINESS, ANEMIA, CRAMPS, CONVULSIONS, SHOCK, COMA AND DEATH. COPPER SOLUTIONS MAY CAUSE SENSITIZATION REACTIONS. ALUMINUM MAY BE IMPLICATED IN ALZHEIMER'S DISEASE. INHALATION OF ALUMINUM CONTAINING DUSTS MAY CAUSE PULMONARY DISEASE.
ACUTE EFFECTS:	
INHALATION:	MAY CAUSE SNEEZING, IRRITATION, ULCERATION OF MUCUS MEMBRANE INCLUDING PERFORATION OF NASAL SEPTUM. NAUSEA, WEAKNESS, AND METAL FUME FEVER.
INGESTION:	COPPER INGESTION CAUSES NAUSEA, VOMITING, ABDOMINAL PAIN, METALLIC TASTE, AND DIARRHEA. INGESTION OF LARGE DOSES MAY CAUSE STOMACH AND INTESTINE ULCERATION, JAUNDICE, AND KIDNEY AND LIVER DAMAGE
SKIN:	IRRITANT TO SKIN AND MUCOUS MEMBRANE.
EYE:	MAY CAUSE IRRITATION AND DISCOLORATION.
CHRONIC EFFECTS:	PROLONGED EXPOSURE MAY CAUSE DISCOLOR SKIN AND HAIR, DERMATITIS, IRRITATION OF MUCUS MEMBRANE. INGESTION MAY CAUSE LIVER, CNS AND KIDNEY DAMAGE..
ROUTES OF EXPOSURE:	INHALATION, INGESTION, SKIN, EYE.
TARGET ORGAN:	RESPIRATORY SYSTEM, SKIN, LIVER, KIDNEYS
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:	PERSONS WITH PRE-EXISTING SKIN DISORDERS OR IMPAIRED LIVER, KIDNEY, OR PULMONARY FUNCTION OR PRE-EXISTING WILSON'S DISEASE MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS MATERIAL.

CARCINOGENITY:

NTP:	NO
IARC:	NO
OSHA:	NO

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6. STABILITY

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STABILITY:	STABLE
THERMAL DECOMPOSITION/ CONDITIONS TO BE AVOIDED:	DECOMPOSITION WILL NOT OCCUR IF USED AND STORED ACCORDING TO SPECIFICATIONS.
INCOMPATIBILITY (MATERIAL TO AVOID):	OXIDIZING AGENTS, ACIDS
HAZARDOUS DECOMPOSITION PRODUCTS:	METAL OXIDE FUME..

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7. EMERGENCY AND FIRST AID PROCEDURES:

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INHALATION:	REMOVE TO FRESH AIR, KEEP WARM AND QUIET, GIVE OXYGEN IF BREATHING IS DIFFICULT. SEEK IMMEDIATE MEDICAL ADVICE
INGESTION:	SEEK IMMEDIATE MEDICAL ADVICE.
SKIN:	WASH AFFECTED SKIN WITH SOAP AND WATER FOR 15 MINUTES. SEEK MEDICAL ADVICE.
EYE:	FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. THEN CONSULT A DOCTOR.
CONSULT A DOCTOR.	

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8. HANDLING AND STORAGE

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HANDLING AND STORAGE	STORE IN A COOL, DRY PLACE AVOIDING CONTACT WITH INCOMPATIBLE MATERIALS. WASH THOROUGHLY AFTER HANDLING.
OTHER PRECAUTIONS:	NORMAL LAB COAT. DO NOT STORE TOGETHER WITH ACIDS. STORE AWAY FROM OXIDIZING AGENTS.

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9. SPILL OR LEAK PROCEDURES

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:	WEAR PROTECTIVE CLOTHING, GOGGLES AND A NIOSH APPROVED RESPIRATOR. SPRINKLE MODERATELY WITH DAMP SAND AND COLLECT FOR DISPOSAL AVOIDING DUST CLOUDS AS MUCH AS POSSIBLE.
RESPIRATORY PROTECTION (SPECIFY TYPE):	IMPERVIOUS GLOVES. USE SUITABLE RESPIRATOR WHEN HIGH CONCENTRATIONS ARE PRESENT.
VENTILATION:	PROPERLY OPERATING CHEMICAL FUME HOOD DESIGNED FOR HAZARDOUS CHEMICALS AND HAVING AN AVERAGE FACE VELOCITY OF AT LEAST 100 FEET PER MINUTE.

PROTECTIVE GLOVES: THE SELECTION OF SUITABLE GLOVES NOT ONLY DEPENDS ON THE MATERIAL, BUT ALSO ON QUALITY. QUALITY WILL VARY FROM MANUFACTURER TO MANUFACTURER.

EYE PROTECTION: SAFETY GLASSES

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: PROTECTIVE WORK CLOTHING.

WASTE DISPOSAL METHOD: IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

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#### 10. TOXICITY DATA

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CARCINOGENICITY: NO CLASSIFICATION DATA ON CARCINOGENIC PROPERTIES OF THIS MATERIAL IS AVAILABLE FROM THE EPA, IARC, NTP, OSHA, OR ACGIH.

ADDITIONAL INFORMATION: TO THE BEST OF OUR KNOWLEDGE THE ACUTE AND CHRONIC TOXICITY OF THIS SUBSTANCE IS NOT FULLY KNOWN.

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#### 11. TRANSPORTATION DATA

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PROPER SHIPPING NAME: METAL POWDER, FLAMMABLE, N.O.S. (BRASS POWDER)

UN# 3089

PACKING GROUP: III

HAZARD CLASS: 4.1

ADR/RID CLASS: 4.1

IMDG CLASS: 4.1

AIR TRAN. ICAO/IATA CLASS: 4.1

MARITIME TRAN. IMDG CLASS: 4.1

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#### 12. OTHER INFORMATION

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THIS SAFETY DATA SHEET SHOULD BE USED IN CONJUNCTION WITH TECHNICAL SHEETS. IT DOES NOT REPLACE THEM. THE INFORMATION GIVEN IS BASED ON OUR KNOWLEDGE OF THIS PRODUCT, AT THE TIME OF PUBLICATION. IT IS GIVEN IN GOOD FAITH. THE ATTENTION OF THE USER IS DRAWN TO THE POSSIBLE RISKS INCURRED BY USING THE PRODUCT FOR ANY OTHER PURPOSE OTHER THAN THAT FOR WHICH IT WAS INTENDED. THIS DOES NOT IN ANY WAY EXCUSE THE USER FROM KNOWING AND APPLYING ALL THE REGULATIONS GOVERNING HIS ACTIVITY. IT IS THE SOLE RESPONSIBILITY OF THE USER TO TAKE ALL PRECAUTIONS REQUIRED IN HANDLING THE PRODUCT. THE AIM OF THE MANDATORY REGULATIONS MENTIONED IS TO HELP THE USER TO FULFILL HIS OBLIGATIONS REGARDING THE USE OF HAZARDOUS PRODUCTS.