

ENGLEHARD CORP. SPECIALTY METALS DIV. -- SILVALOY 15 SILVER-COPPER-PHOSPHORUS  
BRAZING ALLOY -- 3439-00-204-2555

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===== Product Identification =====

Product ID:SILVALOY 15 SILVER-COPPER-PHOSPHORUS BRAZING ALLOY

MSDS Date:11/13/1997

FSC:3439

NIIN:00-204-2555

MSDS Number: CHKWV

=== Responsible Party ===

Company Name:ENGLEHARD CORP. SPECIALTY METALS DIV.

Address:235 KILVERT ST

City:WARWICK

State:RI

ZI

P:02886

Country:US

Info Phone Num:401-739-9550

Emergency Phone Num:800-424-9300(CHEMTREC)

CAGE:86337

=== Contractor Identification ===

Company Name:ENGELHARD CORP

Address:235 KILVERT ST

Box:City:WARWICK

State:RI

ZIP:02886

Country:US

Phone:401-739-9550

CAGE:86337

Company Name:ENGELHARD CORP SPECIALTY CHEM DIV RESEARCH DEPT

Address:MENLO PARK

Box:City:EDISON

State:NJ

ZIP:08817

Country:US

Phone:908-205-5000

CAGE:9A166

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===== Composition/Information on Ingredients =====

Ingred Nam

e:COPPER (SARA 313) (CERCLA)  
CAS:7440-50-8  
RTECS #:GL5325000  
Fraction by Wt: 74-94%  
Other REC Limits:NONE RECOMMENDED  
OSHA PEL:0.1MG/M3 FUME/1 DUST  
ACGIH TLV:0.2 MG/M3 FUME; 9596  
EPA Rpt Qty:5000 LBS  
DOT Rpt Qty:5000 LBS

Ingred Name:SILVER (SARA 313) (CERCLA)  
CAS:7440-22-4  
RTECS #:VW3500000  
Fraction by Wt: 0.5-19%  
Other REC Limits:NONE RECOMMENDED  
OSHA PEL:0.01 MG/M3  
ACGIH TLV:0.1 MG/M3; 9596  
EPA Rpt Qty:1 LB  
DOT Rpt Qty:1 LB

Ingred Name:PHOSPHOROUS (YELLOW) (SARA 302/313) (CERCLA)  
CAS:7723-14  
-0  
RTECS #:TH3500000  
Fraction by Wt: 2-8%  
Other REC Limits:NONE RECOMMENDED  
OSHA PEL:0.1 MG/M3  
ACGIH TLV:0.02 PPM; 9596  
EPA Rpt Qty:1 LB  
DOT Rpt Qty:1 LB

===== Hazards Identification =====

LD50 LC50 Mixture:NONE SPECIFIED BY MANUFACTURER.  
Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES  
Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO  
Health Hazards Acute and Chronic:EYE/SKIN:IRRIT.INHAL:IRRIT RESP  
TRACT.SHORTTERM OVEREXPO MAY CAUSE FLU-LIKE IL  
LNESS(METAL FUME  
FEVER).TYPICALLY METAL FUME FEVER BEGINS 4-12HRS AFT SUFFICIENT  
EXPO TO FRESHLY FORMED FUMES.SYNDROME RUN S ITS COURSE IN  
24-48HRS.INGEST:HARMFUL.MAY CAUSE ABDOMINAL  
PAIN,NAU,VOMIT,DIARR.COPPER POIS CAN RESULT IN (SUPPLEMENTA)  
Explanation of Carcinogenicity:PER  
MSDS:CARCINOGENICITY:NPT/IARC/OSHA:NO.  
Effects of Overexposure:OVEREXPO MAY CAUE KIDNEY/LIVER DMG,BLOOD  
DISORDERS.MAY CAUSE RESP TRACT IRRIT.OVEREXPO TO FRESHLY FORMED  
FUMES MAY CAUSE FLU-LIKE

ILLNESS CALLED METAL FUME FEVER.HARMFUL IF  
LG AMTS SWALLOWED.MAY CAUSE GI IRRIT,NAU,VOMIT,DIARR.MAY CAUSE  
EYE/SKIN IRRIT.

Medical Cond Aggravated by Exposure:MAY ADVERSELY AFFECT EXISTING MED  
CONDITIONS SUCH AS EYE,SKIN,RESPIRATORY,BLOOD,LIVER, &/OR KIDNEY  
AILMENTS.INDIVIDUALS W/WILSONS DISEASE @INCR RISK OF COPPER POIS.

===== First Aid Measures =====

First Aid:EYE:FLUSH W/PLENTY OF WATER.IRRIT DVLPS CALL DR.SKIN:IMMED  
WASH W/SOAP/PLEN  
TY OF WATER.IRRIT PERSIST CALL DR.INHAL:EXPO TO  
EXCESSIVE LEVELS OF METAL FUMES REMOVE TO FRESH AIR.SEEK MED  
ATTN.INGEST:PROC EDURES NORMALLY NOT NEEDED.IF LARGE QUANTITIES  
INGESTED SEEK MED ADVICE.

===== Fire Fighting Measures =====

Autoignition Temp:Autoignition Temp Text:NA

Lower Limits:NOT APPLICAE

Upper Limits:NOT APPLICAE

Extinguishing Media:USE CO2,CHEM FOAM,DRY CHEM.USE ANY MEANS FOR  
EXTINGUISHING SURROUNDING FIRE.DONT USE WATER ON META  
L FIRES.

Fire Fighting Procedures:WEAR NIOSH/MSHA APPROV POSITIVE-PRESSURE  
SELF-CONTAINED BREATHING APPARATUS & PROTECTIVE CLOTHING AS  
SEPCIFIED IN 29CFR1910.156.

Unusual Fire/Explosion Hazard:NOT FIRE/EXPLO HAZ IN SOLID FORM.FINELY  
DIVIDED DUST MAY IGNITE,BURN RAPIDLY WHEN MIX W/AIR IN PROPER  
PROPORTIONS.TOXIC METAL FUMES MAY BE RELEASED IN FIRE SITU

===== Accidental Release Measures =====

Spill Release Procedures:CONTAIN.SCOPP UP/VACUUM.NOTIFICATIO  
N OFNAT

RESP CNTR 800-424-8802 MAY BE REQUIRED.REFER EPA/DOT/APPLIC  
STAT/LOC REGS FOR CURRENT RESPONSE INFO.RECOMMEND EA USER ESTABLISH  
SPCC-INCLUDE PROPER STORAGE/C NTR/CLEANUP,RESUE/DISPO.

Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

===== Handling and Storage =====

Handling and Storage Precautions:STORE IN COOL DRY LOCATION AWAY FROM  
INCOMPATIBLE MATLS.AVOID CONTACT W/DUST/MIST/FUMES RESULTING FROM  
USE OF PRODUCT.USE ONLY W/ADEQUA

TE VENTILATION.

Other Precautions:DONT EAT/DRINK/SMOKE IN WORKAREA.PESONNEL SMPL  
PROCEDURE:CU:NIOSH MANUAL ANALYTICAL METHODS,4TH ED,METHOD  
7029;PHOSPHORUS:SAME MANUAL ABOVE,METHOD 7905;SILVER:SAME MANUAL  
ABOVE,METHOD 7300. DISPO:CHEM ADDN/PROCES/ALTER MATL MAKE INFO  
INACCU

===== Exposure Controls/Personal Protection =====

Respiratory Protection:DUST/FUME GENERATED,NIOSH/MSHA APPROV RESP MAY  
BE NECESSARY.FOLLOW ALL REQMTS FOR RESP PROGRAMS/SELECTION SET

FORTH IN OSHA REG(29CFR1910.134) & ANSI Z99.2(PRACTICES FOR RESP  
PROTECTION).

Ventilation:GEN/LOC EXHAU VENTI AS NECESSARY TO CONTROL ANY AIR  
CONTAMINANTS TO W/IN PELS/TLVS DURING USE OF PRODUCT.

Protective Gloves:REFER TO ANSI/ASC Z49.1-94

Eye Protection:SAFETY GLASSES(W/SIDE SHIELDS).

Other Protective Equipment:BODY PROTECTION AS NECESSARY TO PREVENT SKIN  
CONTACT.

Work Hygienic Practices:WASH THOROUGHLY AFT HNDLG. SARA SEC 313  
CHEMS:YES.

Supplemental Safety and Health  
HEALTH

:HEMOLYTIC ANEMIA,KID/LIV/SPLEEN DMG.POT HEALTH EFFECTS DESCRIBED  
ABOVE ONLY APPLY IF DUST/FUME FORMED.CHRONIC:PROL OVEREXPO TO  
PHOSPORUS CAUSE GI DISTRESS,GARLIC BREATH,NECROSIS,DEFORMITY IN JA  
W.SYSTEMIC EFFECTS(CARDIAC,LIV,KID,DYSFUNCTION)RESULT DUE TO PROL  
FUME INHAL.ARGYRIA(PERM LOC BLUE-FREY DISCOLOR EYE/SK)

===== Physical/Chemical Properties =====

HCC:N1

Boiling Pt:B.P. Text:NE

Melt/Freeze Pt:M.P/F.P Text:1178F,637C

Decomp Temp:Decomp Text:NP

Vapor Pres:NA

Vapor Density:NA

Spec Gravity:7.40-8.54

pH:NA

Viscosity:NP

Solubility in Water:INSOLUBLE

Appearance and Odor:METALLIC WIRE,ROD,STRIP; ODOLRESS

Percent Volatiles by Volume:NP

Corrosion Rate:NP

===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES

STRONG ACIDS/BASES,OXIDIZING AGENTS,ACETYLENE,AMMONIA,H2O2,MG  
METAL,AMMONIUM NITRATE,HYDROGEN SULFIDE,CHLORINATED RUBB.

Stability Condition to Avoid:NONE EXPECTED.

Hazardous Dec

Composition Products: TOXIC METAL OXIDES ARE EMITTED WHEN HEATED ABOVE MELTING POINT. AMT OF FUME EVOLVED INCREASES AS TEMPERATURES RISES.

===== Disposal Considerations =====

Waste Disposal Methods: CONTAINS AG/AG CMPDS-DISPO MAY BE REG UNDER HAZ WASTE D011. BEF DISPO PROD/MIX W/PROD SHOULD BE TESTED FOR TC UNDER EPA HAZ WASTE REGS TCLP TEST PROCEDURES(40CFR261 ET SEQ). DISPO/RECYCL/RECLAMA REQMS VARY BY LOC/TYP OF DISPO SELECTED. CONSULT AUTHORIT

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===== Other Information =====

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