Product ID:BRAZING ALLOYS (SILVER) MSDS Date:04/01/1990 FSC:3439 NIIN:01-012-6658 MSDS Number: BGDHG === Responsible Party === Company Name:JW HARRIS CO INC Address:10930 DEERFIELD RD City:CINCINNATI State:OH ZIP:45242 Country:US Info Phone Num:513-891-2000 Emergency Phone Num:800-543-4536 CAGE:HO350

=== Contractor Identification === Company Name: J. W. HARRIS CO., INC. Address:10930 DEERFIELD ROAD Box:City:CINCINNATI State:OH ZIP:45242-4110 Country:US Phone:513-891-2000 CAGE:27911 Company Name: JW HARRIS CO INC Address:10930 DEERFIELD RD Box:City:CINCINNATI State:OH ZIP:45242 Country:US Phone:513-891-2000 CAGE:HO350

Ingred Name:SILVER (SARA 313) (CERCLA) CAS:7440-22-4 RTECS #:VW3500000 Fraction by Wt: 15% OSHA PEL:0.01 MG /M3 ACGIH TLV:0.1 MG/M3 EPA Rpt Qty:1 LB DOT Rpt Qty:1 LB

Ingred Name:COPPER (SARA 313) (CERCLA) CAS:7440-50-8 RTECS #:GL5325000 Fraction by Wt: 80% OSHA PEL:0.1MG/M3 FUME;1 DUST ACGIH TLV:0.2 MG/M3 FUME EPA Rpt Qty:5000 LBS DOT Rpt Qty:5000 LBS

Ingred Name:PHOSPHOROUS (WHITE) (SARA 302/313) (CERCLA) CAS:7723-14-0 RTECS #:TH3500000 Fraction by Wt: 5% OSHA PEL:0.1 MG/M3 ACGIH TLV:0.02 PPM EPA Rpt Qty:1 LB DOT Rpt Qty:1 LB

Ingred Name:SUPDAT: OPERATOR'S HEAD W/RESPECT TO FUME PLUME, AS WELL AS PRESENCE OF CONTAMINANTS IN ATM (SUCH AS CHLORINATED (ING 5) RTECS #:9999999ZZ

Ingred Name:ING 4: HYDROCARBON VAPS FROM CLEANING & DEGREASING ACTIVITIES). WHEN FILLER METAL IS CONSUMED, FUME & GAS DECOMP (ING 6)

RTECS #:9999992Z

Ingred Name:ING 5: PRODS & NOT INGREDS IN ROD/WIRE ARE IMPORTANT. CONC OF GIVEN FUME/GAS COMPONENT MAY DECR/INCR BY MANY (ING 7) RTECS #:9999999ZZ

Ingred Name:ING 6: TIMES THE ORIGINAL CONC IN FILLER METAL. DECOMP PRODS OF NORM OPERATION INCL THOS E ORIGINATING FROM (ING 8) RTECS #:99999992Z

Ingred Name: ING 7: VOLATILIZATION RXN OF THE WIRE. RTECS #:99999992Z

Ingred Name:VENT: EMPLOYEE TO KEEP HIS/HER HEAD OUT OF THE FUMES. SEE ANSI/ASC Z49.1 SECTION 5. RTECS #:9999999ZZ

Ingred Name:EYE PROT: & FULL LENGTH FSHLD . USE FSHLD W/FILTER LENS OF APPROP SHADE NUMBER (SEE ANSI/ASC Z49.1- (ING 11) RTECS #:9999999ZZ

Ingred Name:ING 10: SECTION 4.2). PROVIDE PROT SCREENS & FLASH GOGGLES, IF NEC, TO SHIELD OTHERS. RTECS #:9999999ZZ Ingred Name:OTHER PROT EQUIP: INCL GLOVES & PROT FSHLD & MAY INCL ARM PROTECTORS, APRONS, HATS, SHOULDER PROT, AS WELL AS (ING 13) RTECS #:9999999ZZ

Ingred Name:ING 12: DARK SUBSTANTIAL CLOTHING. RTECS #:99999992Z

LD50 LC50 Mixture: NONE SPECIFIED BY MANUFACTURER. Routes of Entry: Inhalation:YES Skin:NO Ingestion:NO Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO Health Hazards Acute and Chronic: COPPER FUME MAY CAU SE METAL FUME FEVER. SHORT TERM SYMPS MAY INCL METALLIC TASTE IN MOUTH, DRYNESS OR IRRIT OF THROAT FOLLOWED BY COUGHING, SHORTNESS OF BREATH, NAUSEA, FEVER, BODY ACHE & CHILLS. LONG TERM EXPOS TO WELDING FUME, GASES OR DUST MAY CONTRIBUTE TO PULM IRRIT OR PNEUMOCONIOSIS. BRAZING (EFTS OF OVEREXP) Explanation of Carcinogenicity:NOT RELEVANT Effects of Overexposure: HLTH HAZ: ALLOYS ARE FREQUENTLY USED W/FLUORIDE TYPE FLUX. IF APPLIC, FLUX FUME SHOULD BE CONSIDERED ONE RECO M WAY TO DETERMINE COMPOSITION & QTY OF FUMES & GASES TO WHICH WORKERS ARE EXPOSED IS TO TA KE AIR SAMPLE IN WORKER'S BRTHG ZONE. SEE ANSI/AWS F1.1 AVAILABLE FROM AMERICAN WELDING SOCIETY. Medical Cond Aggravated by Exposure: INDIVIDUALS WITH IMPAIRED PULMONARY FUNCTIONS OR ILLNESS MAY HAVE SYMPTOMS EXACERBATED BY FUME **IRRITANTS.** First Aid: INGEST: CALL MD IMMEDIATELY . EYES: IMMEDIATELY FLUSH W/POTABLE

WATER FOR A MINIMUM OF 15 MINUTES, SEEK ASSISTANCE FROM MD . SKIN: FLUSH W/COPIOUS AMOUNTS OF WATER. CALL MD . INHAL: REMOVE FROM DUST OR FUME EXPOSURE. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. SUMMON MEDICAL AID IMMEDIATELY.

Flash Point:NONFLAMMABLE Extinguishing Media:MEDIA SUITABLE FOR SURROUNDING FIRE . Fire Fighting Procedures:USE NIOSH/MSHA APPROVED SCBA AND FULL PROTECTIVE EQUIPMENT . Unusual Fire/Explosion Hazard:OPEN FLAME AND SPARKS CAN IGNITE COMBUSTIBLES. SEE ANSI/ASC Z49.1-1983 SECTION 6.

Spill Release Procedures: NONE SPECIFIED BY MANUFACTURER. Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER. Handling and Storage Precautions: READ & UNDERSTAND MANUFACTURER'S INSTRUCTION & PRECAUTIONARY LABEL ON PRODUCT. SEE ANS Z49.1, SAFETY IN WELDING & CUTTING." Other Precautions:NONE SPECIFIED BY MANUFACTURER. Respiratory Protection: USE NIOSH/MSHA APPRVD RESPIRABLE FUME RESPIRATOR OR AIR SUPPLIED RESPIRATOR WHEN BRAZING IN CONFINED SPACE OR WHERE LOCAL EXHAUST OR VENTILATION DOES NOT KEEP EXPOSURE BELOW TLV. Ventilation: USE ENOUGH VENT & LOC EXHST AT FLAME TO KEEP FUMES & GASES BELOW TLVS IN WORKER'S BRTHG ZONE & GEN AREA. TRAIN (ING 9) Prote ctive Gloves: IMPERVIOUS GLOVES . Eye Protection: ANSI APPRVD CHEM WORKERS GOGG (ING 10) Other Protective Equipment: WEAR HEAD & BODY PROT WHICH HELP PVNT INJURY FROM HEAT, RADIA, SPK & FLAME. SEE ANSI Z49.1. AT MINIMUM THIS (ING 12) Work Hygienic Practices: NONE SPECIFIED BY MANUFACTURER. Supplemental Safety and Health HAZ DECOMP PRODS: BRAZED, PROCESS, PROC & FILLER METALS USED. OTHER CNDTNS WHICH ALSO INFLUENCE COMPOSITION & QTY OF FUMES & GASES TO WHICH WORKERS MAY BE EXPOSED INC L:COATINGS ON METAL BEING BRAZED (SUCH AS PAINT, PLATING/GALVANIZING), NUMBER OF OPERATORS & VOL OF WORK AREA, QUALITY & AMT OF VENT, POSITION OF (ING 4) HCC:N1 Appearance and Odor:NONE SPECIFIED BY MANUFACTURER.

Stability Indicator/Materials to Avoid:YES NONE SPECIFIED BY MANUFACTURER. Stability Condition to Avoid:NONE SPECIFIED BY MANUFACTURER. H azardous Decomposition Products:BRAZING FUMES & GASES CANNOT BE CLASSIFIED SIMPLY. COMPOSITION & QTY OF BOTH ARE DEPENDENT ON METAL BEING (SUPDAT)

Waste Disposal Methods:DISPOSAL MUST BE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS .

Disclaimer (provided with this information by the compiling agencies): This information is formulated for use by elements of the Department of Defense. The United State

s of America in no manner whatsoever,

expressly or implied, warrants this information to be accurate and disclaims all liability for its use. Any person utilizing this document should seek competent professional advice to verify and assume responsibility for the suitability of this information to their particular situation.