

MATERIAL SAFETY DATA SHEET

MSDS DATE:08/15/07

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: GOLD TARGET
SYNONYMS: N/A
PRODUCT CODES: 91006-AU THROUGH 91033-AU
MANUFACTURER: ELECTRON MICROSCOPY SCIENCES
DIVISION: 1560 INDUSTRY ROAD/P.O. BOX 550
ADDRESS: HATFIELD, PA 19440

EMERGENCY PHONE: 215-412-8400
CHEMTREC PHONE: 800-424-4300

FAX PHONE: 215-412-8450

CHEMICAL NAME: GOLD
CHEMICAL FAMILY: GOLD

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT:
GOLD

<u>CAS NO.</u>	<u>% WT</u>	<u>% VOL</u>	<u>SARA 313 REPORTABLE</u>
7440-57-5	99.99	N/A	
	<u>ppm</u>	<u>mg/m3</u>	
OSHA PEL-TWA:	N/A	N/A	
OSHA PEL STEL :	N/A	N/A	
OSHA PEL CEILING:	N/A	N/A	
ACGIH TLV-TWA:	N/A	N/A	
ACGIH TLV STEL:	N/A	N/A	
ACGIH TLV CEILING:	N/A	N/A	

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

ROUTES OF ENTRY: N/A

POTENTIAL HEALTH EFFECTS

EYES: EXPOSURE OF THE EYES TO THIS MATERIAL IN POWDERED FORM MAY PRODUCE LOCALIZED ARGYRIA, IRRITATION, CONJUNCTIVITIS AND ULCERATION OF THE CORNEA.

SKIN: FOLLOWING REPEATED OR PROLONGED CONTACT, REMOVE CONTAMINATED CLOTHING. WASH AFFECTED AREA WITH LARGE QUANTITIES OF WATER FOR AT LEAST FIVE MINUTES. SEEK MEDICAL ATTENTION IF NECESSARY.

INGESTION: INGESTION OF THIS MATERIAL IN FINELY-DIVIDED FORM MAY PRODUCE GASTRIC IRRITATION, VOMITING, ABDOMINAL PAIN, HEMORRAGE AND DIARRHEA. LONG-TERM CHRONIC INGESTION MAY PRODUCE INJURY TO THE LIVER, KIDNEY, SPLEEN, PANCREAS, AND BRAIN.

INHALATION: NO SIGNIFICANT ACUTE OR CHRONIC EFFECTS ARE KNOWN FROM EXPOSURE TO GOLD METAL BY INHALATION.

ACUTE HEALTH HAZARDS: N/A

CHRONIC HEALTH HAZARDS: N/A

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: PRE-EXISTING PULMONARY DISEASES (E.G. BRONCHITIS, EMPHYSEMA) MAY BE AGGRAVATED BY INHALATION EXPOSURE TO THIS MATERIAL, PARTICULARLY AS FUMES.

CARCINOGENICITY

OSHA: NO ACGIH: NO NTP: NO IARC: NO
OTHER: NIOSH: NO

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SECTION 4: FIRST AID MEASURES

EYES: FLUSH WITH WATER FOR 15 MINUTES. IF IRRITATION OCCURS, SEEK MEDICAL ATTENTION

SKIN: WASH WITH SOAP AND WATER. IF IRRITATION OCCURS, SEEK MEDICAL ATTENTION.

INGESTION: IF SUBJECT IS CONSCIOUS, INDUCE VOMITING. IF UNCONSCIOUS OR CONVULSIVE, SEEK IMMEDIATE MEDICAL ASSISTANCE.

INHALATION: IF SIGNS AND SYMPTOMS OF TOXICITY ARE OBSERVED, REMOVE SUBJECT FROM CONTAMINATED AREA, ADMINISTER OXYGEN AND SEEK MEDICAL ATTENTION. KEEP THE SUBJECT WARM AND AT REST. PERFORM ARTIFICIAL RESPIRATION IF BREATHING HAS STOPPED.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: N/A

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, UPPER: N/A
(% BY VOLUME) **LOWER:** N/A

FLASH POINT: N/A

F: N/A

C: N/A

METHOD USED: N/A

AUTOIGNITION TEMPERATURE: N/A

F: N/A

C: N/A

NFPA HAZARD CLASSIFICATION

HEALTH: 0

FLAMMABILITY: 0

REACTIVITY: 0

OTHER: N/A

HMIS HAZARD CLASSIFICATION

HEALTH: 0

FLAMMABILITY: 0

REACTIVITY: 0

PROTECTION: N/A

EXTINGUISHING MEDIA: USE DRY POWDER. DO NOT USE WATER.

SPECIAL FIRE FIGHTING PROCEDURES: USE SELF CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: N/A

HAZARDOUS DECOMPOSITION PRODUCTS: N/A

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: CLEAN UP SPILLED MATERIAL SO AS TO MINIMIZE DISPERSION OF DUST. WET SWEEPING OR VACCUMING USING HEPA FILTRATION ARE RECOMMENDED METHODS.

SECTION 7: HANDLING AND STORAGE

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HANDLING AND STORAGE: DO NOT STORE AT HIGHLY- ELEVATED TEMPERATURES OR IN PROXIMITY TO INCOMPATIBLE MATERIALS.

OTHER PRECAUTIONS: N/A

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

VENTILATION: USE MECHANICAL LOCAL EXHAUST VENTILATION ADEQUATE TO MAINTAIN AIRBORNE CONCENTRATIONS OF ALL COMPONENTS AND THEIR DECOMPOSITION PRODUCTS TO WITHIN THEIR RESPECTIVE OSHA PELS.

RESPIRATORY PROTECTION: IF EXPOSURE LEVELS EXCEED OSHA PEL(S), WEAR A NIOSH/MSHA- APPROVED RESPIRATOR HAVING A PROTECTION FACTOR APPROPRIATE TO THE AIRBORNE CONCENTRATIONS OF THE CONTAMINANT(S) GENERATED.

EYE PROTECTION: WEAR EYE PROTECTION (SAFETY GLASSES, DUST-PROOF GOGGLES) ADEQUATE TO PREVENT EYE CONTACT WITH THIS MATERIAL IN FINELY-DIVIDED FORM AND TO PREVENT EYE INJURY FROM THE HAZARDS OF SOLDERING. PLASTIC-FRAME SPECTACLES WITH SIDE SHIELDS AND FILTER LENSES (SHADE # 3 OR # 4) ARE RECOMMENDED.

SKIN PROTECTION: WEAR APPROPRIATE PROTECTIVE GLOVES AND CLOTHING TO PREVENT SKIN INJURIES FROM THE HAZARDS OF SOLDERING AND/OR FOR PROLONGED OR REPEATED CONTACT WITH FINELY-DIVIDED MATERIAL. IF THIS MATERIAL IS USED WITH A FLAME, AVOID FLAMMABLE FABRICS.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: SOLDERS MAY BE USED WITH A SEPERATELY- APPLIED FLUX WHICH. WHEN HEATED, MAY EMIT IRRITATION AND/OR TOXIC GASES AND FUMES. CONSULT THE MSDS FOR THE SPECIFIC FLUX IN USE TO DETERMINE ITS HAZARDS AND APPROPRIATE PROTECTIVE MEASURES. FOR GENERAL GUIDANCE, REFER TO AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) Z49.1, "SAFETY IN WELDING & CUTTING" (AMERICAN WELDING SOCIETY, MIAMI, FL 33135).

WORK HYGIENIC PRACTICES: TO AVOID INGESTION OF MATERIAL, WASH HANDS AND FACE BEFORE EATING, DRINKING OR CONSUMPTION OF TABACCO,

EXPOSURE GUIDELINES: N/A

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: YELLOW METAL IN FORM OF WIRE, ROD, STRIP, POWDER OR PREFORMED SHAPES

ODOR: N/A

PHYSICAL STATE: SOLID

pH AS SUPPLIED: N/A

pH (Other): N/A

BOILING POINT:

F: 5576 DEG

C: 3080 DEG

MELTING POINT:

F: 1947 DEG

C: 1064 DEG

FREEZING POINT: N/A

F: N/A

C: N/A

VAPOR PRESSURE (mmHg): 81.1

@

F: N/A

C: N/A

VAPOR DENSITY (AIR = 1): N/A

@

F: N/A

C: N/A

@

F: N/A

C: N/A

EVAPORATION RATE: N/A

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BASIS (=1): N/A

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (con't)

SOLUBILITY IN WATER: INSOLUBLE

PERCENT SOLIDS BY WEIGHT: N/A

PERCENT VOLATILE: N/A
BY WT/ BY VOL @

F: N/A

C: N/A

VOLATILE ORGANIC COMPOUNDS (VOC): N/A

WITH WATER: N/A LBS/GAL
WITHOUT WATER: N/A LBS/GAL

MOLECULAR WEIGHT: N/A

VISCOSITY: N/A

@

F: N/A

C: N/A

SECTION 10: STABILITY AND REACTIVITY

STABILITY: STABLE

CONDITIONS TO AVOID (STABILITY): STABLE AT ROOM TEMPERATURE

INCOMPATIBILITY (MATERIAL TO AVOID): AMMONIA, AMMONIA & AQUA REGIA, H2O2, ACETYLENE, CS2, ETHANOL & NITRIC ACID; BROMAZIDE, 1,1F3, ETHYLENEIMINE; OXALIC ACIDS, PERMONOSULFURIC ACID, TARTARIC ACID; NH4NO3, INORGANIC & ORGANIC PEROXIDES, METAL CHLORATES, BROMATES & IODATES, SE, TE, S, MNCL2, F2, AZIDES, HYDROXYLAMINE, CRO3.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: HEATING TO ELEVATED TEMPERATURES MAY GENERATE METAL/ METAL OXIDE FUME.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID (POLYMERIZATION): N/A

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: N/A

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: N/A

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: COMPLY WITH FEDERAL, STATE, LOCAL REGULATIONS.

RCRA HAZARD CLASS: N/A

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SECTION 13: DISPOSAL CONSIDERATIONS (con't)

RETURN TO MANUFACTURER FOR RECLAIM.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME:

HAZARD CLASS:

NOT CONTROLLED BY DOT, IATA, ICAO OR IMO REGULATIONS

ID NUMBER:

PACKING GROUP:

LABEL STATEMENT:

WATER TRANSPORTATION

PROPER SHIPPING NAME:

N/A

HAZARD CLASS:

ID NUMBER:

PACKING GROUP:

LABEL STATEMENTS:

AIR TRANSPORTATION

PROPER SHIPPING NAME:

N/A

HAZARD CLASS:

ID NUMBER:

PACKING GROUP:

LABEL STATEMENTS:

OTHER AGENCIES: N/A

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): N/A

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): N/A

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):

311/312 HAZARD CATEGORIES: ACUTE HEALTH HAZARD

CHRONIC HEALTH HAZARD

313 REPORTABLE INGREDIENTS: THIS PRODUCT CONTAINS THE FOLLOWING TOXIC CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT (EPCRA) OF 1986 AND 40 CFR 372:

<u>CHEMICAL NAME</u>	<u>CAS #</u>	<u>PERCENT OF MIXTURE</u>
GOLD	7440-57-5	99.99

STATE REGULATIONS: N/A

INTERNATIONAL REGULATIONS: N/A

SECTION 16: OTHER INFORMATION

OTHER INFORMATION: N/A

PREPARATION INFORMATION: N/A

DISCLAIMER: IN COMPLIANCE WITH THE OSHA HAZARD COMMUNICATION STANDARD, 29 C.F.R. 1910.1200, WE ARE PROVIDING YOU WITH A MSDS FOR THE HAZARDOUS MATERIAL YOU ARE PURCHASING.

IT IS YOUR RESPONSIBILITY TO EDUCATE YOUR EMPLOYEES ON THE SAFE USE OF THE HAZARDOUS

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MATERIAL.

ELECTRON MICROSCOPY SCIENCES MAKES NO PRESENTATION AS TO THE ACCURACY OF THE INFORMATION IN THE MSDS. THE INFORMATION IS BELIEVED TO BE CORRECT; HOWEVER, YOU (THE CUSTOMER), SHOULD PERFORM YOUR OWN INVESTIGATION AND INDEPENDENT VERIFICATION. IF YOU RESELL THE PRODUCT, YOU ARE RESPONSIBLE TO FORWARD THE INFORMATION IN THE MSDS TO YOUR CUSTOMER.