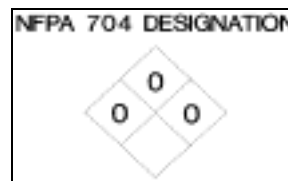


# MATERIAL SAFETY DATA SHEET MSDS 4.512



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## SECTION I

CHEMICAL FAMILY: Metal Alloy  
 CHEMICAL NAME: Gold - Copper alloy  
 TRADE NAME: ELKONIUM® 76

## SECTION II - INGREDIENTS AND HAZARDS

INGREDIENT		CAS REGISTRY #	%	ACGIH TLV/TWA mg/m <sup>3</sup>	OSHA PEL/TWA mg/m <sup>3</sup>
Gold	(Au)	7440-57-5	90	N/A	N/A
Copper	(Cu)	7440-50-8	10	1	1

Copper is subject of the reporting requirements of Section 313, SARA Title III.

## SECTION III - PHYSICAL DATA

MELTING POINT °C: (≈ 930 - 950)  
 VAPOR PRESSURE AT ROOM TEMPERATURE: N/A  
 VAPOR DENSITY: N/A  
 SOLUBILITY IN WATER: Insoluble  
 PERCENT VOLATILE (BY VOLUME %): N/A  
 SPECIFIC GRAVITY (g/cc): 17.3  
 APPEARANCE: Deep Golden metal

## SECTION IV - FIRE AND EXPLOSIVE DATA

FLASH POINT AND METHOD: N/A  
 AUTOIGNITION TEMPERATURE °C: N/A  
 FLAMMABILITY LIMITS IN AIR: UPPER: N/A LOWER: N/A  
 EXTINGUISHING MEDIA: Type C or type ABC extinguisher  
 FIRE FIGHTING PROCEDURES: Use self contained breathing apparatus with a full face piece operated in a pressure demand or positive pressure mode.

### UNUSUAL FIRE AND EXPLOSION HAZARDS:

If this material is reduced to powder form, caution must be used to prevent fire or explosion. To extinguish a metal powder fire use dry graphite or other class "D" fire extinguishing powder. Do NOT use water.

References: *Threshold Limit Values and Biological Exposure Indices*, ACGIH, 1992-1993  
*Code of Federal Regulations - Labor #29*, Rev. July 1, 1990  
*Pocket Guide to Chemical Hazards*, NIOSH, 1990  
*Chemical Regulatory Cross Reference, 3<sup>rd</sup> Edition*, J. J. Keller, 1992 (w updates)  
 "NFPA Hazard Rating Index Chart", Labor Safety Supply Co., 1987  
*Fire Protection Guide on Hazardous Materials, 9<sup>th</sup> Edition*, Quincy, MA, 1986  
*Registry of Toxic Effects of Chemical Substances*, NIOSH, 1985-1986  
*Occupational Health Guidelines for Chemical Hazards*, NIOSH/OSHA, 1981  
*Dangerous Properties of Industrial Materials, 5<sup>th</sup> Edition*, Van Nostrand Reinhold Co., 1979

## SECTION V - REACTIVITY DATA

STABILITY: Stable HAZARDOUS POLYMERIZATION: Will not occur  
 HAZARDOUS DECOMPOSITION PRODUCTS: Melting may generate harmful fumes.  
 INCOMPATIBILITY AND CONDITIONS TO AVOID:  
 Gold can form explosive compounds with NH<sub>3</sub>, or H<sub>2</sub>O<sub>2</sub>. Stable in normal environments.  
 Reacts with oxidizers, alkalis, sodium azide, acetylene.

## SECTION VI - HEALTH HAZARD INFORMATION

## EFFECTS OF OVEREXPOSURE:

Gold: No specific toxicological information available in cited references. Any metallic dust or fumes may cause eye, skin, or respiratory tract irritation.  
 Copper: Inhalation - cough, chills, general malaise, kidney disfunction. Ingestion - liver disfunction. Eyes and skin - irritant and/or discoloring.  
 Health hazards: Chronic lung, liver or kidney damage. May aggravate or intensify symptoms of pre-existing anemia or pulmonary disease.

CARCINOGENICITY:	NTP	IARC	OSHA
Gold	No	No	No
Copper	No	No	No

## EMERGENCY AND FIRST AID PROCEDURES:

Remove victim to fresh air. Flush skin and eyes with water. For inhalation or ingestion, seek immediate medical assistance.

## SECTION VII - SPILL OR LEAK PROCEDURES

## STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Scoop up large quantities. Use sweeping compound to remove the rest. Avoid creating airborne particles.

WASTE DISPOSAL METHOD: Precious metal alloys can be recycled.

STORING AND HANDLING: N/A

OTHER PRECAUTIONS: Avoid generating dust or fumes.

## SECTION VIII - SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION: NIOSH approved cartridge respirator.

VENTILATION: Ventilate operations when producing dust or fumes.

PROTECTIVE GLOVES: Recommend hand protection when handling metals for prevention of cuts from slivers and edges.

EYE PROTECTION: Wear safety glasses or goggles, if fumes, chips or dust are generated.

The information contained herein is believed to be correct, but no guarantee or warranty with respect to accuracy, completeness, or results is implied and no liability is assumed. Rev. November 15, 1993