SAFETY DATA SHEET

1. PRODUCT AND COMPANY INFORMATION

SDS # 14KGR-01

MANUFACTURER

Morvillo Precision Products
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MANUFACTURER EMERGENCY CONTACT

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PRODUCT IDENTIFICATION TEXT

The information in this SDS is applicable to product code #'s 4, 30, 35, 38, 58, 77, 80,90, 94, 96, 112, 88, 788, CFA, and M34. Information in this SDS represents the known health and safety hazards associated with these products and their components. The identity of specific components may be determined according to U.S. Department of Labor regulations [29CFR, Part 1910.1200(1)] or the applicable laws of other countries.

PRODUCT IDENTIFICATION

Product Name: **14k Red Gold**

2. HAZARDS IDENTIFICATIONS

CLASSIFICATION

These alloys are considered an "article" and are not hazardous in its solid form. However, certain processes such as cutting, milling, grinding, melting and welding could result in some serious hazardous materials being emitted. The GHS classification below pertains to these emitted products during these processes.

LABEL SIGNAL WORD

Warning

HAZARD STATEMENT

Copper may cause an allergic skin reaction. May cause damage to organs (Lung, central nervous system) through prolonged or repeated exposure. Nickel is suspected of causing cancer. May damage fertility or the unborn child. Hazardous to the aquatic environment. Avoid breathing dust/fume/gas/mist/vapors. Do not eat, drink or smoke when using this product. Avoid release to the environment

SYMBOLS

Symbols	Hazard	GHS Classification	Hazard Statements
	Carcinogenicity	Category – 2	Suspected carcinogen. Nickel is suspected of causing cancer of the lungs and nasal cavities.
	Respiratory Sensitizer	Category – 1	Nickel may cause allergy or asthma symptoms or breathing difficulties if inhaled
	Toxic to Reproduction	Category – 1B	May cause genetic effects
	Specific Target Organ Toxicity (repeated exposure)	Category – 1	Copper may cause damage to lungs, blood and kidneys through prolonged or repeatedexposure
	Skin Sensitizer	Category – 1	Nickel may cause allergic skin reaction.
	Acute Toxic to Aquatic Life	Category – 1	Very toxic to aquatic life.
	Chronic Toxic to Aquatic Life	Category – 1	Very toxic to aquatic life with long lasting effects.

POTENTIAL HEALTH EFFECTS

EYE
Causes eye irritation.

SKIN
Causes skin irritation. May cause skin discoloration.

INGESTION
Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage.

INHALATION
Dust is irritating to the respiratory tract. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count.

CHRONIC
Prolonged or repeated skin contact may cause dermatitis. May cause liver and kidney damage. May cause lung damage.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	%	CAS#	PEL#	TLV#
Gold	52.42-58.40	7440-57-5	N/A	N/A
Silver	1.68- 2.05	7440-22-4	.01 mg/m3	0.1 mg/m3
Copper	35.32-43.17	7440-50-8	0.1 mg/m3	0.2 mg/m3
Zinc	0.567- 0.69	7440-66-6	5 mg/m3	5 mg/m3 as ZnO
Nickel	0.0-0.0	7440-02-0	1.0 mg/m3	1.0 mg/m3

4.-FIRST AID

EYE CONTACT
Check for and remove any contact lenses. Rinse thoroughly with clean water for at least 15 minutes. Do not use eye ointment. Seek medical attention immediately.

SKIN CONTACT
Remove contaminated clothing, wash immediately with plenty of water for at least 5 minutes. Gently and thoroughly was the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient (moisturizing cream or lotion). If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

INHALATION
Allow the victim to rest in a well ventilated area. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

INGESTION
Do not induce vomiting. If the subject is conscious, give milk or other form of soluble calcium such as limewater, calcium lactate, or calcium gluconate. Seek immediate medical assistance.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:	CO2 and dry chemical
Unsuitable extinguishing media:	Do not use water or halogenated extinguishing media. Do not use water on molten metal: Explosion hazard could result.
Specific hazards arising from the chemical:	During fire, gases hazardous to health may be formed. Solid metal is not flammable; however, finely divided metallic dust or powder may form an explosive mixture with air. In a fire, nickel may form nickel carbonyl, a highly toxic substance and known carcinogen.
Special protective equipment and precautions for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Avoid dust formation. Ensure adequate ventilation. Isolate spilled material and transfer to impervious containers. Avoid contact with skin, eyes, and mucous membranes. Wear protective clothing as described in Section 8 of this safety data sheet.

METHODS AND MATERIALS

Allow spilled material to solidify and scrape up with shovels into a suitable container for recycle or disposal. Collect dust using a vacuum cleaner equipped with HEPA filter. The vacuum cleaner should be explosion-proofed. If not possible, gently moisten dust before it is collected with shovel, broom or the like. This material and its container must be disposed of as hazardous waste. Keep out of water supplies and sewers.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear appropriate personal protective equipment (See Section 8). Persons susceptible for allergic reactions should not handle this product. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Avoid inhalation of dust and fumes. Avoid contact with eyes, skin, and clothing. Do not eat, drink or smoke when using the product. Wash thoroughly after handling

CONDITIONS FOR SAFE STORAGE

Store in tightly closed original container in a dry, cool and well-ventilated place. Keep away from food, drink and animal feeding stuffs. Keep out of reach of children. Store away from incompatible materials (See Section 10).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

	OSHA Permissible Exposure Limit (PEL):		American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV):	
Copper	0.1 mg/m^3 TWA 1 mg/m^3 TWA	Fume dusts & mists	0.2 mg/m^3 TWA 1 mg/m^3 TWA	Fume dusts & mists
Nickel	1 mg/m^3 TWA		1.5 mg/m^3 TWA	inhalable fraction A5
Silver	0.01 mg/m^3 TWA		0.1 mg/m^3 TWA dust 0.01 mg/m^3 TWA Soluble compounds	
Gold	Not stablished		Not stablished	
Zinc	Not stablished		Not stablished	

ENGINEERING CONTROLS

Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of dust. Ventilate as needed to control airborne dust. Use explosion-proof ventilation equipment if airborne dust levels are high. Special ventilation should be used to convey finely divided metallic dust generated by grinding, sawing etc., in order to eliminate explosion hazards. Follow the schedule for work place measurements when working with lead and its compounds.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION

Wear eye protection adequate to prevent eye contact with the product and eye injury from the hazards of cold working. 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 cold working. Avoid flammable fabrics.

RESPIRATORY PROTECTION

If an exposure level exceeds an OSHA PELs or other applicable standard, use an OSHA approved respirator having configuration (class, type of face piece, filter media, assigned protection factor, etc.) appropriate to the concentration of the contaminant(s) generated. For guidance on selection and use of respiratory protection, consult American National Standard Z88.2 (ANSI, New York, NY 10036 USA).

WORK/HYGIENIC PRACTICES

To minimize the possibility of ingestion, wash hands and face before eating, drinking, applying cosmetics, or using tobacco.

9. PHYSICAL DATA AND CHEMICAL PROPERTIES

Appearance: Products are solid metals and are supplied in various shapes.
Color: varies from yellow, to green, and white.
Odor: Not Applicable
pH: Not Applicable
Odor Threshold: Not Applicable
Boiling Point: 4215°F
Melting Point: 1800°F
Evaporation Rate: Not Applicable
Flash Point: N/A
UFL%: Not Applicable
Flammability: Not Flammable
Vapor Pressure: Not Applicable
LFL%: Not Applicable
Relative Density: 8.90 (average)
Vapor Density: Not Applicable
Solubility: Not Soluble
Specific Gravity: No Data
Auto-Ignition Temp: Not Applicable
Partition Coefficient: No Data
Viscosity: Not Applicable

10. STABILITY AND REACTIVITY

REACTIVITY
Low reactivity

CHEMICAL STABILITY
Stable at normal conditions

POSSIBILITY OF HAZARDOUS REACTIONS
Silver and copper can form unstable acetylides in contact with acetylene gas.
Hot molten material will react violently with water resulting in spattering and fuming.

CONDITIONS TO AVOID
Contact with incompatible materials. Dust and fume clouds
Dust clouds may be explosive under certain conditions. Welding, burning, sawing, brazing, grinding or machining operations may generate dusts and fumes of metal oxides.

INCOMPATIBLE MATERIALS
Strong oxidizers and halogens

HAZARDOUS DESCOMPOSITION PRODUCTS
Toxic metal oxides are emitted when heated above the melting point.

11. TOXICOLOGICAL INFORMATION

ROUTES OF EXPOSURE

EYE CONTACT
Causes eye irritation.

SKIN
Causes skin irritation. May cause skin discoloration.

INGESTION
Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage.

INHALATION
Dust is irritating to the respiratory tract. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count.

SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS
May cause irritation to mucous membranes. May cause skin and eye irritation. Coughing. Shortness of breath. Wheezing. The principal symptoms of lead poisoning are gastro-intestinal or central nervous system disturbances and anemia. Sensitization

INFORMATION ON TOXICOLOGICAL EFFECTS

High concentrations of freshly formed fumes/dusts of metal oxides can produce symptoms of metal fume fever. When heated, the vapors/fumes given off may cause respiratory tract irritation. Overexposure of Tin can cause irritation of the eyes, skin, mucous membranes, and respiratory system. Acute overexposure to dust or fume can cause irritation of the eyes, nose, throat, and skin and under severe fume overexposure can cause metal fume fever with flu-like symptoms such as sweet metal taste, dry throat, coughing, fever and chills, tight chest, dyspnea, headache, blurred vision, back pain, nausea, vomiting, fatigue. Symptoms usually disappear within 24 hours. May cause skin and hair discoloration. Inhalation of copper dusts may change the gums and mucous lining of the mouth which is generally attributable to localized tissue effect rather than general toxicity

MEASURE OF TOXICITY

COPPER	> 5,000 mg/kg*	Acute Oral
NICKEL	> 9,000 mg/k*	Acute Oral
SILVER	> 5,000 mg/kg**	Acute Oral
ZINC	> 5410 mg/m3*	Acute Inhalation
GOLD	No data available	

* LD50, Mouse, Oral, ** LC50, Rat, Inhalation, 4 hour

INGREDIENTS LISTED ON THE NATIONAL TOXICOLOGY PROGRAM(NTP)

Nickel (CAS 7440-02-0) Known To Be Human Carcinogen.

INGREDIENTS LISTED ON THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

Nickel (CAS 7440-02-0) 2B Carcinogenic to humans.

ACUTE EXPOSURE

Can cause metal fume fever, a metallic taste in the mouth, dryness or irritation of the throat, and coughing. After 4-48 hours symptoms can include sweating, shivering, headache, fever, muscle aches, nausea, vomiting, weakness and tiredness.

CHRONIC EXPOSURE

Chronic ingestion may damage the liver and kidneys. lungs, and blood,

12.- ECOLOGICAL INFORMATION

These products should not be released into the environment. Compounds can be highly toxic to aquatic organisms.
Metal dusts may migrate into soil and groundwater and be ingested by wildlife.

13.- DISPOSAL CONSIDERATIONS

Do not discharge waste product into sanitary or storm sewers or allow it to contaminate soil. Dispose of in accordance with Federal, State and Local regulations

14. TRANSPORT INFORMATION

Not regulated as dangerous goods per USDOT. No special shipping or transportation requirements.

UN number	Not applicable.
UN proper shipping name	Not applicable.
Transport hazard class	Not applicable.
Environmental hazards	Not applicable.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.	Not applicable
Special precautions	Not applicable.

15 REGULATORY INFORMATION

US-OSHA (Hazard Communication Standard)

References: 29 CFR 1910.1200 Hazard Communication Standard
A finished casting is an article as defined in 29CFR 1910.1200 (c)
29 CFR 1910.1000 Air Contaminants
29CFR1910.1025 Lead

Dust or fumes generated by cleaning, machining, grinding, or welding of the casting may produce airborne contaminants, such as cobalt, copper, iron, lead, manganese, nickel, tin, zinc and silica.

US-EPA (Toxic Substances Control Act–TSCA)

All components of these products are on the TSCA inventory list or are excluded from listing.

US-EPA (SARA Title III)

Releases to the environment of Cobalt, Copper, Lead, Manganese, Nickel and Zinc (fume or dust) may be subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

OTHER INFORMATION

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