



Material Safety Data Sheet

Quartz Crystal Blank

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Section 1: Product and Company Identification

Product Name: Quartz Crystal Blank
Manufacturer: Xeco, Inc.
1651 N. Bulldog Rd.
Cedar City, UT. 84720 USA
Tel: 435-586-0507
Website: www.xeco.net
Emergency Information: 435-586-0507

Section 2: Composition/Ingredients

CAS Number	Component	Percentage	TLV, ACGIH (mg/m3)	PEL, OSHA (mg/m3)
14808-60-7	Alpha Quartz	>99.5	0.05	0.1
7440-57-5	Gold	<0.5	n/a	n/a
7440-47-3	Chromium	<0.5	0.5	1.0
7429-90-5	Aluminum	<0.5	10.0	15.0

Section 3: Hazardous Identification

NFPA Rating (Scale 0-4): Health = 1, Fire = 0, Reactivity = 0

Emergency Overview: The materials in solid form are generally not considered hazardous. However, if the process involves grinding, melting, cutting, or any other process that can release dust or fumes, hazardous levels of airborne particulate could be generated. Cancer hazard (in humans).

Primary Route of Entry: Inhalation, Skin contact.

Potential Health Effects:
Inhalation: Acute – Irritation
Chronic – May cause coughing, difficulty breathing, ulceration, weakness, bluish skin color, lung damage, heart disorder, and cancer.

Ingestion: Acute – Generally none toxic.
Chronic – Generally none toxic

Skin Contact: Acute – Irritation
Chronic – Irritation, Dermatitis

Eye Contact: Acute – Irritation
Chronic – Irritation

Medical Conditions Aggravated
By Exposure: Individuals how have had allergic reactions to metals or sensitivity, may encounter skin rash or dermatitis, is skin contact with this product occurs. Persons with impaired pulmonary functions may incur further impairment if dust or fumes are inhaled.

Listed as a Carcinogen/
Potential Carcinogen: Yes – NTP, Yes – IARC, No – OSHA

Section 4: First Aid Measures

Inhalation: Remove to uncontaminated area. Give artificial respiration if not breathing by qualified personal and seek medical attention immediately.

Ingestion: Obtain medical assistance at once. If vomiting occurs, keep head lower than thighs to prevent aspiration.

Skin Contact: Skin cuts and abrasions can be treated by standard first aid. Skin contamination with dust or fumes requires removing contaminated clothes and shoes. Wash with soap and water for at least 15 minutes. If irritation persists, obtain medical assistance.

Eye Contact: Flush eyes immediately with running water, occasionally lifting eye lids for at least 15 minutes. If irritation persists, obtain medical assistance.



Section 5: Fire Fighting Measures

Fire and Explosive Hazards: Negligible fire hazard.

Extinguishing Media: Use extinguishing agents appropriate for surrounding area.

Fire Fighting: Move container from fire area if possible. Protective clothing and self-contained breathing apparatus should be worn. Avoid breathing vapors or dust. High levels of dust or fine particles in air may ignite or explode.

Hazardous Combustion Products: Thermal decomposition may release toxic and/or hazardous gases.

Section 6: Accidental Release Measures

Occupational Release: In solid form this material poses no special clean-up problems. Use normal clean-up procedures. For clean-up of dust use wet sweeping or HEPA vacuum. Do not use compressed air for cleaning. For large spills, store in dry container for reclamation or later disposal.

Water Release: Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) prohibits contaminating any known source of drinking water with substances known to cause cancer and/or reproductive toxicity. Keep out of water and sewer supplies.

Section 7: Storage and Handling

Storage: Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

Safe Handling Precautions: Avoid generating dust when handling. See Section 8.

Section 8: Exposure Controls/Personal Protection

Ventilation: Local Exhaust – Recommended when cutting, grinding, melting, or any other operation where dust or fumes are created.
General – Process enclosure recommended meeting published exposure limits.

Eye Protection: In solid form standard safety glasses are recommended. If dust or fumes are present, slash proof or dust resistant safety goggles should worn. An eye wash fountain should be accessible within the immediate work area.

Skin Protection: In solid form protective gloves are recommended, to prevent mechanical irritation. If dust or fumes are present, wear appropriate chemical resistant clothing and gloves.

Respiratory Protection: In solid form respiratory protection is not normally required. Use an appropriate NIOSH approved respirator if airborne dust concentrations exceed the OSHA, PEL, or ACGIH, TLV. The following respirators and maximum use concentrations are recommendations by the U.S. Department of Health and Human Services, NIOSH Pocket Guide to Chemical Hazards; NIOSH criteria documents or by the U.S. Department of Labor, 29 CFR 1910 Subpart Z. The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator, and be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA).

Environmental Surveillance: If the operation generates dust or fumes, exposure to airborne materials should be determined by having air samples taken in the employees breathing zone and work area.

Exposure Limits: Not established for product as whole. Refer to Section 2.



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Section 9: Physical and Chemical Properties

	Alpha Quartz	Gold	Chromium	Aluminum
Physical Form	Solid	Solid	Solid	Solid
Color	Transparent White	Golden/Yellow	Silver/Gray	Silver Gray
Melting Point	1610°C	1064°C	1875°C	650°C
Specific Gravity	2.635 – 2.660	n/a	n/a	n/a
Vapor Pressure	0 mm Hg @ 20°C	Varies	Varies	Varies
Molecular Weight	60.09 g/mole	196.97 g/mole	51.99 g/mole	26.98 g/mole
Odor	None	None	None	None
Water Solubility	Insoluble	Insoluble	Insoluble	Insoluble
Density	2.6 – 2.7 g·cm ⁻³	19.3 g·cm ⁻³	7.19 g·cm ⁻³	2.7 g·cm ⁻³

Section 10: Stability and Reactivity

Stability: Stable at normal temperature and pressure.

Hazardous Polymerization: Will not occur.

Incompatibility: Acetylene, Ammonia, Acids, Bases, Oxidizing agents, Halogens, Hydrogen Peroxide, Metal Salts, and Combustible Materials.

Decomposition Products: Thermal decomposition may release toxic and/or hazardous gases.

Conditions to Avoid: Avoid generating dust or fumes.

Section 11: Toxicology Information

Route of Entry: Inhalation and Ingestion

Toxicity Data:

	Alpha Quartz	Gold	Chromium	Aluminum
Human, Inhalation-intermittent LC _{LO} (µm/m ³) – 10 years	300	n/a	n/a	n/a
Rat, Intratracheal LD _{LO} (mg/kg)	200	n/a	n/a	n/a
Rat, Inhalation TC _{LO} (mg/kg)	200	n/a	n/a	n/a
Rat, Oral TD _{LO} (g/kg)	120	n/a	n/a	n/a
Monkey, Inhalation-intermittent TC _{LO} (mg/m ³) – 818 days	10	n/a	n/a	n/a

Carcinogenic, Tumorigenic, Mutagenic Data:

Alpha Quartz is recognized by NTP as a Known Human Carcinogen; Recognized by IARC as a Human and Animal Sufficient Evidence, Group 1 Carcinogen; Recognized by ACGIH as a Suspected Human Carcinogen. Alpha Quartz has been investigated as a tumorigenic and mutagenic effectors.

Acute Toxicity Level: Insufficient data.

Target Effect: Poisoning may affect the respiratory track.

At Increased Risk from Exposure: Persons with decreased pulmonary function.

Additional Data: Smoking may enhance the toxic effects.

Health Affects: Refer to Section 3.

Section 12: Ecological Information

Information not available for Alpha Quartz, however; metal dust and fumes may have significant impact on water and air quality. Emissions, spills, and release to the environment should be controlled immediately.

Section 13: Disposal Information

Dispose of in accordance with all applicable Federal, State, and Local Regulations.



Section 14: Transportation Information

D.O.T. SHIPPING NAME:	Not Regulated
D.O.T. HAZARDOUS CLASS:	None
PRODUCT RQ:	None
TECHNICAL SHIPPING NAME:	Quartz Mesa Blanks
UN/NA NUMBER:	None
D.O.T. and IATA Dangerous Goods Regulations:	Not regulated, in solid form.

Section 15: Regulatory Information

U.S. Regulations:

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.

SARA Title III, Section 302 (40 CFR 355.30): Not regulated.

SARA Title III, Section 304 (40 CFR 355.40): Not regulated.

SARA Title III, Section 313 (40 CFR 372.65): Not regulated.

OSHA Process Safety (29 CFR 1910.119): Not regulated.

California Proposition 65: Airborne particles (respirable size) of crystalline silica is known by the state of California to cause cancer (1988).

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):
ACUTE: No
CHRONIC: Yes
FIRE: No
REACTIVE: No
SUDDEN RELEASE: No

CANADIAN Regulations -
WHMIS Disclosure List:
Alpha Quartz – Not regulated
Gold – Not regulated
Chromium – Subdivision B of Division 2 of Class D, as defined by Section 54, of SOR/DORS-88-86.
Aluminum – Division 4, Class B, as defined by Section 39, of SOR/DORS-88-86.

National Inventory Status: U.S. Inventory (TSCA): Listed on inventory.
TSCA Status - Yes.

European Union:
Alpha Quartz – Risk Phrase: Not applicable
Gold – Risk Phrase: Not applicable
Chromium – Risk Phrase: R-68
Aluminum – Risk Phrase: R-10

EC Classification: T – Toxic

EC Risk and Safety Phrases:
R49 – May cause cancer by inhalation
S2 – Keep out of reach of children
S24 – Avoid contact with skin
S46 – If swallowed, seek medical advice immediately and show container or label.

Section 16: Other Information

This information is based on Xeco Inc. present knowledge. The information and recommendations are taken from sources believed to be accurate. Xeco Inc. makes no warranty with respect of the accuracy of the information or the suitability of the recommendations, and assumes no liability to any user thereof.