

MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
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SRM Number: 70a
MSDS Number: 70a
SRM Name: Potassium Feldspar

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Description: Standard Reference Material (SRM) 70a is powdered potassium feldspar that was sieved to 200 mesh (75 µm) and blended to ensure homogeneity. The feldspar material is a maximum microcline (perhite) with about 10–15 % of albite. The material is packaged in 40 g containers.

Substance: Potassium Feldspar (perhite; microcline KAlSi_3O_8 ; albite $\text{NaAlSi}_3\text{O}_8$; alkali feldspar; feldspar)

2. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 1 Fire = 0 Reactivity = 0

Major Health Hazards: Cancer (in humans)^(a)

Physical Hazards: There are no known physical hazards associated with this material.

Potential Health Effects (Acute and Chronic):

Inhalation: Acute: irritation, chest pain; chronic: same as acute and difficulty breathing, digestive disorders, rash, disorientation, bluish skin color, lung damage, and cancer.

Skin Contact: Irritation.

Eye Contact: Mechanical Irritation and possible eye damage.

Ingestion: Irritation.

Listed as a Carcinogen/Potential Carcinogen

	Yes	No
National Toxicology Program (NTP) Report on Carcinogens	X ^(a)	_____
International Agency for Research on Cancer (IARC) Monographs	X ^(a)	_____
Occupational Safety and Health Administration (OSHA)	X ^(a)	_____

^(a) Silica (quartz and amorphous) potentially included in the Feldspar. NTP lists silica, crystalline, as a known carcinogen; IARC lists silica (quartz) as a Group 1 (carcinogenic to humans); silica (respirable) size is listed by OSHA.

3. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Component	CAS Number	EC Number (EINECS)	Nominal Concentration (%)
Potassium Feldspar	68476-25-5	270-666-7	100%
Quartz (as SiO_2)	14808-60-7	238-878-4	>0.1%

^(a) This material contains various other elements (see Certificate of Analysis) that are listed as simple oxides but these oxides are not representative of the components. Quartz is specifically identified due to its hazardous nature and the small particle size. The concentration of the ones not listed above are below the reportable limit, hazardous components (1 %) or carcinogens (0.1 %), as required by OSHA, 29 CFR 1910.1200 (g)(2)(i)(C)(1) for MSDS information.

NOTE: The material's maximum particle size is below the inhalation size limits (100 µm or 100 microns, inhalation) established by the ACGIH, Appendix D.

EC Classification: Quartz and Feldspar are not classified.

EC Risk (R No.): Not assigned.

EC Safety (S No.): Not assigned.

EC Risk/Safety Phrases: See Section 15, "Regulatory Information".

4. FIRST AID MEASURES

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration by qualified personnel. Seek immediate medical attention.

Skin Contact: Rinse affected area with soap and water for at least 15 minutes. Seek medical assistance if necessary.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Seek immediate medical attention.

Ingestion: If a large amount is swallowed, seek medical attention.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Negligible fire hazard.

Extinguishing Media: Use extinguishing agents appropriate to surrounding fire.

Fire Fighting: Avoid inhalation of combustion by-products.

Flash Point (°C): Not applicable.

Autoignition Temp. (°C): Not applicable.

Flammability Limits in Air

UPPER (Volume %): Not applicable.

LOWER (Volume %): Not applicable.

Products of Combustion: Thermal decomposition may miscellaneous decomposition products (see Section 10 Stability and Reactivity").

6. ACCIDENTAL RELEASE MEASURES

Occupational Release: Collect spilled material in appropriate container for proper disposal.

Disposal: Refer to Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

Storage: Store and handle in accordance with all current regulations and standards.

Safe Handling Precautions: See Section 8 "Exposure Controls and Personal Protection".

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: No specific exposure limits are established for feldspar. Exposure limits are listed for Quartz as they are the most stringent applicable to this material.

Component Quartz:

OSHA PEL (TWA): (30)/(% SiO₂ + 2) mg/m³ (total dust)

OSHA PEL (TWA): (10)/(% SiO₂ + 2) mg/m³ (respirable fraction)

ACGIH (TWA): 0.025 mg/m³ (respirable fraction)

NIOSH (TWA): 0.05 mg/m³ (respirable dust)

NIOSH (IDLH): 50 mg/m³ (respirable dust)

Ventilation: Local exhaust ventilation system.

Respirator: If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29 CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

Eye Protection: Wear safety goggles. An eye wash station and drench shower should be readily available near the handling and use areas.

Personal Protection: Chemically resistant gloves and clothing are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Powder, no odor information available.

Molecular Formula: Not applicable.

Specific Gravity (water = 1): >1

Water Solubility: Not available.

10. STABILITY AND REACTIVITY

Stability: Stable Unstable

Stable at normal temperature and pressure.

Conditions to Avoid: Avoid generating dust.

Incompatible Materials: Oxidizing materials.

Fire/Explosion Information: See Section 5, "Fire Fighting Measures".

Hazardous Decomposition: Miscellaneous decomposition products.

Hazardous Polymerization: Will Occur Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: Inhalation Skin Ingestion

Toxicity Data: May cause irritation and a cough.

Component: Potassium Feldspar

No information available.

Component: Quartz

Rat, Oral LD₅₀: 500 mg/kg

Health Effects: See Section 2: "Hazards Identification" for potential health effects.

Target Organs: Respiratory tract.

Mutagen/Teratogen:

Component: Potassium Feldspar

Registry of Toxic Effects of Chemical Substances (RTECS) publishes no data on these compounds.

Component: Quartz

Quartz has been studied for tumorigenic and mutagenic effects. The following endpoints are listed in the RTECS.

Tumorigenic effects: Rat, Inhalation TCLo: 50 mg/kg (6 hour).

Mutagenic effects: Human, 120 mg/L/24hour; 40 µg/cm².

Medical Conditions Generally Aggravated by Exposure: Respiratory disorders.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: No ecotoxicity data listed.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Not regulated by DOT or IATA.

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.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE HEALTH: No

CHRONIC HEALTH: Yes

FIRE: No

REACTIVE: No

PRESSURE: No

STATE REGULATIONS

California Proposition 65: Known as cancer causing for silica crystalline particles of respirable size.

CANADIAN REGULATIONS

WHMIS Information: Not provided for this information.

EUROPEAN REGULATIONS

EC Classification: Not classified.

EC Risk and Safety Phrases: Not assigned.

NATIONAL INVENTORY STATUS

U.S. Inventory (TSCA): Feldspar listed. Quartz listed.

TSCA 12(b), Export Notification: Not listed.

16. OTHER INFORMATION

Sources: ChemAdvisor, MSDS *Feldspar*, 10 June 2011.

ChemAdvisor, MSDS *Quartz*, 06 April 2011.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.