SZABO SCANDIC

Part of Europa Biosite

Produktinformation

- Forschungsprodukte & Biochemikalien
- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!

Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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Cryolite

sc-227690

Material Safety Data Sheet

Hazard Alert Code Key:	EXTREME	HIGH	MODERATE	LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Cryolite

STATEMENT OF HAZARDOUS NATURE
CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA

SUPPLIER
Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

EMERGENCY
ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS
AlF3.3NaF, AlF6.3Na, Na3AlF6, "aluminate (3-)hexafluoro, trisodium", "aluminium hexafluoride trisodium", "aluminium sodium fluoride", "trisodium hexafluoroaluminate", cryolite, "Hall Cell Bath", "sodium fluoaluminate", "sodium aluminofluoride", "sodium hexafluoroaluminate"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

		Min	Max
Flammability:	0		
Toxicity:	2		
Body Contact:	2		
Reactivity:	0		
Chronic:	2		

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK
Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
Harmful by inhalation and if swallowed.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
■ Although ingestion is not thought to produce harmful effects, the material may still be damaging to the health of the individual following ingestion, especially where pre-existing organ (e.
g.
■ Fluoride causes severe loss of calcium in the blood, with symptoms appearing several hours later including painful and rigid muscle contractions of the limbs.
Cardiovascular collapse can occur and may cause death with increased heart rate and other heart rhythm irregularities.

EYE
■ Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn).
Slight abrasive damage may also result.

SKIN
■ The material is not thought to produce adverse health effects or skin irritation following contact (as classified using animal models).
Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
■ Open cuts, abraded or irritated skin should not be exposed to this material.
■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED
■ There is some evidence to suggest that the material can cause respiratory irritation in some persons.
The body's response to such irritation can cause further lung damage.
■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.
■ Acute effects of fluoride inhalation include irritation of nose and throat, coughing and chest discomfort.
A single acute over-exposure may even cause nose bleed.

CHRONIC HEALTH EFFECTS
■ Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.
Extended exposure to inorganic fluorides causes fluorosis, which includes signs of joint pain and stiffness, tooth discoloration, nausea and vomiting, loss of appetite, diarrhea or constipation, weight loss, anemia, weakness and general unwellness. There may also be frequent urination and thirst.
Exposure to large doses of Aluminum has been connected with the degenerative brain disease Alzheimer's Disease.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
sodium aluminium fluoride	15096-52-3	> 84
aluminium oxide	1344-28-1.	3-6
silica crystalline - quartz	14808-60-7	0.4
water	7732-18-5	0.1

Section 4 - FIRST AID MEASURES

SWALLOWED
· Immediately give a glass of water. · First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

EYE
■ If this product comes in contact with eyes: · Wash out immediately with water. · If irritation continues, seek medical attention.

SKIN
■ If skin or hair contact occurs: · Flush skin and hair with running water (and soap if available). · Seek medical attention in event of irritation.

INHALED
· If dust is inhaled, remove from contaminated area. · Encourage patient to blow nose to ensure clear passage of breathing. · If irritation or discomfort persists seek medical attention.

NOTES TO PHYSICIAN
■ For acute or short term repeated exposures to fluorides:
· Fluoride absorption from gastro-intestinal tract may be retarded by calcium salts, milk or antacids.
· Fluoride particulates or fume may be absorbed through the respiratory tract with 20-30% deposited at alveolar level.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Negligible
Upper Explosive Limit (%):	Not applicable
Specific Gravity (water=1):	2.95
Lower Explosive Limit (%):	Not applicable

EXTINGUISHING MEDIA
· Water spray or fog.
· Foam.

FIRE FIGHTING
· Alert Emergency Responders and tell them location and nature of hazard.
· Wear breathing apparatus plus protective gloves for fire only.
When any large container (including road and rail tankers) is involved in a fire,
consider evacuation by 100 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS
· Non combustible.
· Not considered to be a significant fire risk, however containers may burn.
Decomposition may produce toxic fumes of: hydrogen fluoride, metal oxides.

FIRE INCOMPATIBILITY
■ None known.

PERSONAL PROTECTION
Glasses:
Chemical goggles.
Gloves:
Respirator:
Type AX-P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
■ Environmental hazard - contain spillage.
· Clean up all spills immediately.
· Avoid contact with skin and eyes.
MAJOR SPILLS
■ Environmental hazard - contain spillage.
Moderate hazard.
· CAUTION: Advise personnel in area.
· Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
· Avoid all personal contact, including inhalation.
· Wear protective clothing when risk of exposure occurs.

RECOMMENDED STORAGE METHODS
· Polyethylene or polypropylene container.
· Check all containers are clearly labelled and free from leaks.

STORAGE REQUIREMENTS
■ Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Peak ppm	Peak mg/m³	TWA F/CC	Notes

US NIOSH Recommended Exposure Limits (RELs)	sodium aluminium fluoride (Sodium aluminum fluoride (as F))	2.5	[*Note: The REL and PEL also apply to other inorganic, solid fluorides (as F).]
US - Wyoming Toxic and Hazardous Substances Table Z-3 Mineral Dusts	sodium aluminium fluoride (Silica: Amorphous, including natural diatomaceous earth)	80 / %SiO2	
Canada - Northwest Territories Occupational Exposure Limits (English)	sodium aluminium fluoride (Silica - Fused Silica (Respirable Mass))	0.1	
Canada - Northwest Territories Occupational Exposure Limits (English)	sodium aluminium fluoride (Silica - Amorphous (Respirable Mass))	2	
US OSHA Permissible Exposure Levels (PELs) - Table Z3	sodium aluminium fluoride (Silica: Amorphous, including natural diatomaceous earth)	80/(%SiO2)	
US - California Permissible Exposure Limits for Chemical Contaminants	sodium aluminium fluoride (Silica, amorphous Respirable fraction)	3	(n)
US - California Permissible Exposure Limits for Chemical Contaminants	sodium aluminium fluoride (Silica, amorphous Total dust)	6	
US NIOSH Recommended Exposure Limits (RELs)	sodium aluminium fluoride (Silica, amorphous)	6	
Canada - Northwest Territories Occupational Exposure Limits (English)	sodium aluminium fluoride (Silica - Amorphous (Total Mass))	5	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	sodium aluminium fluoride (Silica Amorphous: Silica, fused (respirable fraction++))	0.1	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	sodium aluminium fluoride (Silica Amorphous: Silica, fume (respirable fraction++))	2	
Canada - Northwest Territories	sodium aluminium fluoride (Silica - Quartz (Total	0.3	

Occupational Exposure Limits (English)	Mass))			
US - Alaska Limits for Air Contaminants	sodium aluminium fluoride (Silica, amorphous)		6	
US ACGIH Threshold Limit Values (TLV)	sodium aluminium fluoride (Fluorides (as F))		2.5	TLV Basis: bone damage; fluorosis. BEI
Canada - Alberta Occupational Exposure Limits	sodium aluminium fluoride (Fluorides, as F)		2.5	
US OSHA Permissible Exposure Levels (PELs) - Table Z1	sodium aluminium fluoride (Fluorides (as F))		2.5	
US OSHA Permissible Exposure Levels (PELs) - Table Z2	sodium aluminium fluoride (Fluoride as dust (Z37.28–1969))		2.5	
Canada - British Columbia Occupational Exposure Limits	sodium aluminium fluoride (Fluorides (as F))		2.5	
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	sodium aluminium fluoride (Fluorides (as F))		2.5	
US - Oregon Permissible Exposure Limits (Z-2)	sodium aluminium fluoride (Fluoride as dust (Z37.28-1969))		2.5	
US - Oregon Permissible Exposure Limits (Z-1)	sodium aluminium fluoride (Fluorides (As F))	-	2.5	(See Oregon Table Z-2)
Canada - Prince Edward Island Occupational Exposure Limits	sodium aluminium fluoride (Fluorides (as F))		2.5	TLV Basis: bone damage; fluorosis. BEI
US - Wyoming Toxic and Hazardous Substances Table Z-2 Acceptable ceiling concentration, Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	sodium aluminium fluoride (Fluoride as dust (Z37.28-1969))		2.5	
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	sodium aluminium fluoride (Fluorides (as F))		2.5	

US - Hawaii Air Contaminant Limits	sodium aluminium fluoride (Fluorides (as F))	2.5		(CAS (Varies with compound))
US - Michigan Exposure Limits for Air Contaminants	sodium aluminium fluoride (Fluorides (as F))	2.5		
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	sodium aluminium fluoride (Fluorides (as F))	2.5		
Canada - Nova Scotia Occupational Exposure Limits	sodium aluminium fluoride (Fluorides (as F))	2.5		TLV Basis: bone damage; fluorosis. BEI
US - Minnesota Permissible Exposure Limits (PELs)	aluminium oxide (alpha-Alumina - Total dust)	10		
US - Minnesota Permissible Exposure Limits (PELs)	aluminium oxide (alpha-Alumina - Respirable fraction)	5		
US - Idaho - Limits for Air Contaminants	aluminium oxide (alpha-Alumina Total dust)	15		
Canada - Alberta Occupational Exposure Limits	aluminium oxide (Alumina (Aluminum oxide))	10		
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	aluminium oxide (Aluminum oxide (as Al))	10		
US OSHA Permissible Exposure Levels (PELs) - Table Z1	aluminium oxide (alpha-Alumina - Total dust)	15		
US OSHA Permissible Exposure Levels (PELs) - Table Z1	aluminium oxide (alpha-Alumina - Respirable fraction)	5		
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	aluminium oxide (alpha-Alumina - Respirable fraction)	5		
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	aluminium oxide (alpha-Alumina - Total dust)	10		
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits	aluminium oxide (alpha-Alumina - Respirable fraction)	5		

for Air Contaminants					
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	aluminium oxide (alpha-Alumina - Total dust)		15		
US - Idaho - Limits for Air Contaminants	aluminium oxide (alpha-Alumina Respirable fraction)		5		
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	aluminium oxide (alpha-Alumina Total dust)		10		
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	aluminium oxide (alpha-Alumina Respirable fraction)		5		
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	aluminium oxide (alpha-Alumina-Respirable fraction)		5		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	aluminium oxide (Aluminum oxide)		10	20	
US - Hawaii Air Contaminant Limits	aluminium oxide (Alumina - Total dust)		10	20	
US - Hawaii Air Contaminant Limits	aluminium oxide (Alumina - Respirable fraction)		5		
US - Washington Permissible exposure limits of air contaminants	aluminium oxide (alpha-Alumina (Aluminum oxide) - Respirable fraction)		5	10	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	aluminium oxide (Alundum (A)l2(O)3))		(See Table 11)		
US - Washington Permissible exposure limits of air contaminants	aluminium oxide (alpha-Alumina (Aluminum oxide) - Total particulate)		10	20	
US - Oregon Permissible Exposure Limits (Z-1)	aluminium oxide (alpha Alumina Total Dust)	-	10		Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the

					federal Limits.
US - Oregon Permissible Exposure Limits (Z-1)	aluminium oxide (alpha Alumina Respirable Fraction)	-	5		Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal Limits.
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	aluminium oxide (alpha-Alumina-Total dust)		15		
US - Michigan Exposure Limits for Air Contaminants	aluminium oxide (alpha-Alumina (aluminum oxide) - Respirable fraction)		5		
US - Alaska Limits for Air Contaminants	aluminium oxide (alpha-Alumina - Total dust)		10		
US - Alaska Limits for Air Contaminants	aluminium oxide (alpha-Alumina - Respirable fraction)		5		
US - Michigan Exposure Limits for Air Contaminants	aluminium oxide (alpha-Alumina (aluminum oxide) - Total dust)		10		
US ACGIH Threshold Limit Values (TLV)	aluminium oxide (Aluminum - Insoluble compounds)		1		TLV Basis: Pneumoconiosis; lower respiratory tract irritation; neurotoxicity
Canada - Prince Edward Island Occupational Exposure Limits	aluminium oxide (Aluminum - Insoluble compounds)		1		TLV Basis: Pneumoconiosis; lower respiratory tract irritation; neurotoxicity
Canada - Nova Scotia Occupational Exposure Limits	aluminium oxide (Aluminum - Insoluble compounds)		1		TLV Basis: Pneumoconiosis; lower respiratory tract irritation; neurotoxicity
Canada - British Columbia Occupational Exposure Limits	aluminium oxide (Aluminum metal and insoluble compounds, Respirable, Revised 2008)		1.0		
US ACGIH Threshold Limit Values (TLV)	aluminium oxide (Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles)		10		See Appendix B current TLV/BEI Book
US ACGIH Threshold Limit Values (TLV)	aluminium oxide (Particles (Insoluble or Poorly Soluble) [NOS] Respirable particles)		3		See Appendix B current TLV/BEI Book

Canada - Nova Scotia Occupational Exposure Limits	aluminium oxide (Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles)	10	See Appendix B current TLV/BEI Book
Canada - Nova Scotia Occupational Exposure Limits	aluminium oxide (Particles (Insoluble or Poorly Soluble) [NOS] Respirable particles)	3	See Appendix B current TLV/BEI Book
Canada - Alberta Occupational Exposure Limits	silica crystalline - quartz (Silica-Crystalline, Respirable particulate - Quartz)	0.025	
US NIOSH Recommended Exposure Limits (RELs)	silica crystalline - quartz (Silica, crystalline (as respirable dust))	0.05	See Appendix A; Ca
Canada - Ontario Occupational Exposure Limits	silica crystalline - quartz (Quartz/Tripoli / quartz ou tripoli)	0.10 (R)	
Canada - British Columbia Occupational Exposure Limits	silica crystalline - quartz (Silica, Crystalline - alpha quartz and Cristobalite, Respirable Revised 2006)	0.025	A2, 1
US OSHA Permissible Exposure Levels (PELs) - Table Z3	silica crystalline - quartz (Silica: Crystalline Quartz (Respirable))	10/(% SiO2+ 2)	(TWA mppcf (b)); (TWA mg/m3 (e))
US ACGIH Threshold Limit Values (TLV)	silica crystalline - quartz (Silica, Crystalline - Quartz)	0.025	TLV Basis: pulmonary fibrosis; lung cancer
US OSHA Permissible Exposure Levels (PELs) - Table Z3	silica crystalline - quartz (Silica: Crystalline Quartz (Total Dust))	30/(% SiO2+ 2)	
US - Minnesota Permissible Exposure Limits (PELs)	silica crystalline - quartz (Coal dust (greater than or equal to 5% SiO2) - Respirable quartz fraction)	0.1	
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	silica crystalline - quartz (Silica, crystaline quartz, respirable dust)	0.1	
US - Idaho - Toxic and Hazardous Substances - Mineral Dust	silica crystalline - quartz (Silca: Crystalline: Quartz (respirable))	[m] 10 mg/M3	
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits	silica crystalline - quartz (Silica, crystalline quartz (as quartz), respirable dust)	0.1	

for Air Contaminants					
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	silica crystalline - quartz (Silica, crystalline quartz (as quartz), respirable dust)	See Table Z-3			
US - California Permissible Exposure Limits for Chemical Contaminants	silica crystalline - quartz (Silica, crystalline Quartz, respirable dust)	0.1			
US - Idaho - Limits for Air Contaminants	silica crystalline - quartz (Silica, crystalline quartz - respirable dust)	[3]			
US - California Permissible Exposure Limits for Chemical Contaminants	silica crystalline - quartz (Silica, crystalline Quartz, total dust)	0.3			
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	silica crystalline - quartz (Silica - Crystalline, Quartz)	0.1			
US - Alaska Limits for Air Contaminants	silica crystalline - quartz (Coal dust (greater than or equal to 5% SiO2),Respirable quartz fraction)	0.1			
US - Alaska Limits for Air Contaminants	silica crystalline - quartz (Coal dust (less than 5% SiO2), Respirable quartz fraction)	2			
US - Michigan Exposure Limits for Air Contaminants	silica crystalline - quartz (Silica, crystalline quartz, Respirable dust)	0.1			
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	silica crystalline - quartz (Silica - Crystalline#: Quartz (respirable fraction++))	0.05			T20
US - Washington Permissible exposure limits of air contaminants	silica crystalline - quartz (Silica, crystalline quartz - Respirable fraction)	0.1	0.3		
US - Hawaii Air Contaminant Limits	silica crystalline - quartz (Silica, crystalline quartz (as quartz), respirable dust)	0.1			
Canada - Prince Edward Island Occupational Exposure Limits	silica crystalline - quartz (Silica, Crystalline - Quartz)	0.025			TLV Basis: pulmonary fibrosis; lung cancer

US - Wyoming Toxic and Hazardous Substances Table Z-3 Mineral Dusts	silica crystalline - quartz (Silica: Crystalline - Quartz (Total Dust))	30 / %SiO2+2	
US - Wyoming Toxic and Hazardous Substances Table Z-3 Mineral Dusts	silica crystalline - quartz (Silica: Crystalline - Quartz (Respirable))	10 / %SiO2+2	
US - Oregon Permissible Exposure Limits (Z-3)	silica crystalline - quartz (Silica: Crystalline Quartz (respirable))	0.1	
Canada - Northwest Territories Occupational Exposure Limits (English)	silica crystalline - quartz (Silica - Silica Flour (Respirable Mass))	0.05	
Canada - Nova Scotia Occupational Exposure Limits	silica crystalline - quartz (Silica, Crystalline - Quartz)	0.025	TLV Basis: pulmonary fibrosis; lung cancer
US - Oregon Permissible Exposure Limits (Z-3)	silica crystalline - quartz (Silica: Crystalline Quartz (total dust))	30 / (%SiO2 +2)	(e)Silica sampling methods must conform to OSHA or NIOSH sampling methods for respirable quartz silica.
US - Idaho - Toxic and Hazardous Substances - Mineral Dust	silica crystalline - quartz (Silca: Crystalline: Quartz (total dust))	30 mg/M3	

ENDOELTABLE
The following materials had no OELs on our records

• water: CAS:7732-18-5

PERSONAL PROTECTION




RESPIRATOR

• type ax-p filter of sufficient capacity.
Consult your EHS staff for recommendations

EYE

· Safety glasses with side shields.
· Chemical goggles.

HANDS/FEET

■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
· frequency and duration of contact,
· chemical resistance of glove material,
· glove thickness and
· dexterity
Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).
· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
· Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Wear chemical protective gloves, eg. PVC.

OTHER

· Overalls.
· P.V.C. apron.
· Barrier cream.
· Skin cleansing cream.
· Eye wash unit.

ENGINEERING CONTROLS

■ Local exhaust ventilation usually required. If risk of overexposure exists, wear an approved respirator.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.
Does not mix with water.
Sinks in water.

State	Divided solid	Molecular Weight	209.95
Melting Range (°F)	1832	Viscosity	Not Applicable
Boiling Range (°F)	Not applicable.	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	Not applicable	pH (1% solution)	Not applicable.
Decomposition Temp (°F)	Not available.	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not applicable	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	2.95
Lower Explosive Limit (%)	Not applicable	Relative Vapor Density (air=1)	Not applicable
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

APPEARANCE

Physical form is usually fine powder or pellets. White/colourless occasionally even black depending on purity. Soluble in concentrated sulfuric acid but only slightly soluble in water. Decomposes to hydrogen fluoride on reaction with strong acid or boiling alkali.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

· Presence of incompatible materials.
· Product is considered stable.

STORAGE INCOMPATIBILITY

■ Salts of inorganic fluoride:
· react with water forming acidic solutions.
· are violent reactive with boron, bromine pentafluoride,bromine trifluoride, calcium disilicide, calcium hydride, oxygen difluoride, platinum, potassium.
· in aqueous solutions are incompatible with sulfuric acid, alkalis, ammonia, aliphatic amines, alkanolamines, alkylene oxides, amides, epichlorohydrin, isocyanates, nitromethane, organic anhydrides, vinyl acetate.
· corrode metals in presence of moisture
· may be incompatible with glass and porcelain.
· Avoid strong acids, bases.
· Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.
· These trifluorides are hypergolic oxidisers. They ignites on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.
· The state of subdivision may affect the results.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

sodium aluminium fluoride

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.
WATER:
ALUMINIUM OXIDE:
■ No significant acute toxicological data identified in literature search.
SODIUM ALUMINIUM FLUORIDE:

TOXICITY	IRRITATION

Oral (rat) LD50: >5000 mg/kg	Nil Reported
Oral (rabbit) LDLo: 9000 mg/kg	
Oral (rat) LD50: 13500 mg/kg (approx)* [US EPA - 1980]*	

TOXICITY	IRRITATION

SILICA CRYSTALLINE - QUARTZ:

Inhalation (human) LCLo: 0.3 mg/m³/10Y	Nil Reported
Inhalation (human) TCLo: 16 mppcf*/8H/17.9Y	
Inhalation (rat) TCLo: 50 mg/m³/6H/71W	

■ WARNING: For inhalation exposure ONLY: This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS.

The International Agency for Research on Cancer (IARC) has classified occupational exposures to respirable (<5 um) crystalline silica as being carcinogenic to humans . This classification is based on what IARC considered sufficient evidence from epidemiological studies of humans for the carcinogenicity of inhaled silica in the forms of quartz and cristobalite. Crystalline silica is also known to cause silicosis, a non-cancerous lung disease.

Intermittent exposure produces; focal fibrosis, (pneumoconiosis), cough, dyspnoea, liver tumours.

* Millions of particles per cubic foot (based on impinger samples counted by light field techniques).

NOTE	: the physical nature of quartz in the product determines whether it is likely to present a chronic health problem. To be a hazard the material must enter the breathing zone as respirable particles.

CARCINOGEN

Fluorides (inorganic, used in drinking-water)	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	3
Fluorides (as F)	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	A4
TWAPPM~	US - Maine Chemicals of High Concern List	Carcinogen	A4
Aluminum - Insoluble compounds	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	A4
aluminium oxide	US - Rhode Island Hazardous Substance List	IARC	
TWAMG_M3~	US - Maine Chemicals of High Concern List	Carcinogen	A4
Silica dust, crystalline, in the form of quartz or cristobalite	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	1
Silica, Crystalline - Quartz	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	A2
silica crystalline - quartz	US - Rhode Island Hazardous Substance List	IARC	
SILICA	US Environmental Defense Scorecard Recognized Carcinogens	Reference(s)	P65
SILICA	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65
QUARTZ	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	IARC, NTP-C
Silica, Crystalline -- Quartz	US NIOSH Recommended Exposure Limits (RELs) - Carcinogens	Carcinogen	Ca
TWAMG_M3~	US - Maine Chemicals of High Concern List	Carcinogen	A2
VPVB_(VERY~	US - Maine Chemicals of High Concern List	Carcinogen	IARC
VPVB_(VERY~	US - Maine Chemicals of High Concern List	Carcinogen	CA Prop 65; NTP 11th ROC

Section 12 - ECOLOGICAL INFORMATION

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
This material and its container must be disposed of as hazardous waste.
Avoid release to the environment.
Refer to special instructions/ safety data sheets.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
sodium aluminium fluoride	No Data Available	No Data Available		
aluminium oxide	No Data Available	No Data Available		
silica crystalline - quartz	No Data Available	No Data Available		

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.
¦ Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:
· Reduction
· Reuse
· Recycling
· Disposal (if all else fails)
This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.
DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.
For small quantities:
· Cautiously dissolve in water.
· Neutralize with sodium carbonate or if product does not dissolve.
· Recycle wherever possible or consult manufacturer for recycling options.
· Consult Waste Management Authority for disposal.

Section 14 - TRANSPORTATION INFORMATION

DOT:
Symbols: G Hazard class or Division: 9
Identification Numbers: UN3077 PG: III
Label Codes: 9 Special provisions: 8, 146,
335, B54,
IB8, IP3,
N20, T1,
TP33
Packaging: Exceptions: 155 Packaging: Non- bulk: 213
Packaging: Exceptions: 155 Quantity limitations: No limit
Passenger aircraft/rail:
Quantity Limitations: Cargo No limit Vessel stowage: Location: A
aircraft only:
Vessel stowage: Other: None
Hazardous materials descriptions and proper shipping names:
Environmentally hazardous substance, solid, n.o.s

Air Transport IATA:

UN/ID Number: 3077 Packing Group: III
Special provisions: A97
Cargo Only
Packing Instructions: 400 kg Maximum Qty/Pack: 956
Passenger and Cargo Passenger and Cargo
Packing Instructions: 400 kg Maximum Qty/Pack: 956
Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity
Packing Instructions: 30 kg G Maximum Qty/Pack: Y956
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S. *(CONTAINS SODIUM ALUMINIUM FLUORIDE)

Maritime Transport IMDG:

IMDG Class: 9 IMDG Subrisk: None
UN Number: 3077 Packing Group: III
EMS Number: F-A , S-F Special provisions: 179 274 335 909
Limited Quantities: 5 kg Marine Pollutant: Yes
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(contains sodium aluminium fluoride)

Section 15 - REGULATORY INFORMATION

sodium aluminium fluoride (CAS: 15096-52-3,13775-53-6,1331-71-1) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)","Canada Ingredient Disclosure List (SOR/88-64)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","OECD Representative List of High Production Volume (HPV) Chemicals","US - New Jersey Right to Know Hazardous Substances","US NIOSH Recommended Exposure Limits (RELs)","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

Regulations for ingredients

aluminium oxide (CAS: 1344-28-1) is found on the following regulatory lists;

"Canada - Alberta Occupational Exposure Limits","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","Canada Domestic Substances List (DSL)","Canada Ingredient Disclosure List (SOR/88-64)","Canada National Pollutant Release Inventory (NPRI)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","International Council of Chemical Associations (ICCA) - High Production Volume List","OECD Representative List of High Production Volume (HPV) Chemicals","US - Alaska Limits for Air Contaminants","US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which emissions must be quantified","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","US - Michigan Exposure Limits for Air Contaminants","US - Minnesota Hazardous Substance List","US - Minnesota Permissible Exposure Limits (PELs)","US - New Jersey Right to Know Hazardous Substances","US - Oregon Permissible Exposure Limits (Z-1)","US - Pennsylvania - Hazardous Substance List","US - Rhode Island Hazardous Substance List","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US DOE Temporary Emergency Exposure Limits (TEELs)","US EPCRA Section 313 Chemical List","US FDA CFSAN Color Additive Status List 5","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act","US OSHA Permissible Exposure Levels (PELs) - Table Z1","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

silica crystalline - quartz (CAS: 14808-60-7,122304-48-7,122304-49-8,12425-26-2,1317-79-9,70594-95-5,87347-84-0) is found on the following regulatory lists;

"Canada - Alberta Occupational Exposure Limits","Canada - British Columbia Occupational Exposure Limits","Canada - Northwest Territories Occupational Exposure Limits (English)","Canada - Nova Scotia Occupational Exposure Limits","Canada - Ontario Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Saskatchewan Occupational Health and Safety Regulations - Designated Chemical Substances","Canada Domestic Substances List (DSL)","Canada Ingredient Disclosure List (SOR/88-64)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs","OECD Representative List of High Production Volume (HPV) Chemicals","US - Alaska Limits for Air Contaminants","US - California Permissible Exposure Limits for Chemical Contaminants","US - California Proposition 65 - Priority List for the Development of NSRLs for Carcinogens","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","US - Idaho - Toxic and Hazardous Substances - Mineral Dust","US - Maine Chemicals of High Concern List","US - Michigan Exposure Limits for Air Contaminants","US - Minnesota Hazardous Substance List","US - Minnesota Permissible Exposure Limits (PELs)","US - New Jersey Right to Know Hazardous Substances","US - Oregon Permissible Exposure Limits (Z-3)","US - Pennsylvania - Hazardous Substance List","US - Rhode Island Hazardous Substance List","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US - Wyoming Toxic and Hazardous Substances Table Z-3 Mineral Dusts","US ACGIH Threshold Limit Values (TLV)","US ACGIH Threshold Limit Values (TLV) - Carcinogens","US DOE Temporary Emergency Exposure Limits (TEELs)","US NFPA 30B Manufacture and Storage of Aerosol Products - Chemical Heat of Combustion","US NIOSH Recommended Exposure Limits (RELs)","US OSHA Permissible Exposure Levels (PELs) - Table Z1","US OSHA Permissible Exposure Levels (PELs) - Table Z3","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

water (CAS: 7732-18-5) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","IMO IBC Code Chapter 18: List of products to which the Code does not apply","International Fragrance Association (IFRA) Survey: Transparency List","OECD Representative List of High Production Volume (HPV) Chemicals","US - Pennsylvania - Hazardous Substance List","US DOE Temporary Emergency Exposure Limits (TEELs)","US NFPA 30B Manufacture and Storage of Aerosol Products - Chemical Heat of Combustion","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US TSCA Section 8 (a) Inventory Update Rule (IUR) - Partial Exemptions"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

■ Cumulative effects may result following exposure*.
■ May produce discomfort of the respiratory system*.

* (limited evidence).

Ingredients with multiple CAS Nos

Ingredient Name CAS sodium aluminium fluoride 15096-52-3, 13775-53-6, 1331-71-1 silica crystalline - quartz 14808-60-7, 122304-48-7, 122304-49-8, 12425-26-2, 1317-79-9, 70594-95-5, 87347-84-0

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■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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