

1. Substance identity and company contact information

Product Name	Electrolyte OS3®
Recommended Use	Not for drug, household or other uses.
Company	Silatronix®, Inc. 3587 Anderson Street, Suite 108 Madison, WI USA 53704 www.silatronix.com
Telephone	608 467-5626
24 Hour Emergency within the US	1-800-255-3924
24 Hour Emergency international	1-813-248-0585
24 Hour Emergency China	+86-400-120-0751

2. Hazards identification

Classification	Eye Irritant (Category 2B) Skin Sensitizer (Category 1B) Acute Toxicity, oral (Category 4) Acute Toxicity, inhalation (Category 2) STOT Respiratory Exposure (Category 2) Chronic aquatic toxicity (Category 3) Acute aquatic toxicity (Category 3)
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Signal Word	Danger
Hazard Statements	

H302:	Harmful if swallowed.
H317:	May cause an allergic skin reaction.
H319:	Causes serious eye irritation
H330:	Fatal if inhaled.
H373:	May cause damage to organs through prolonged and repeated exposure.
H412:	Harmful to aquatic life with long lasting effects.

Symbol



Precautionary Statements

P210:	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
P260:	Do not breathe dust/fume/gas/mist/vapors/spray.
P270:	Do not eat, drink, or smoke while using this product.

P271:	Use only outdoors or in a well-ventilated area.
P280:	Wear protective gloves/protective clothing/eye protection.
P284:	In case of inadequate ventilation wear respiratory protection.
P301+P312+P330:	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P302+P352:	IF ON SKIN: Wash with plenty of water/soap.
P304+P340:	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P309+P310:	IF exposed or if you feel unwell: Immediately call a poison center/doctor.
P333+P313:	If skin irritation or rash occurs: Get medical advice/attention.
P403+P405+P235:	Store in a well-ventilated place. Store locked up. Keep cool.
P501:	Dispose of contents/container to waste disposal. Do not release to water.

Other Hazards	Inhalation of aerosol spray may damage health. Product releases hydrogen fluoride; this causes severe burns and is very toxic by inhalation, dermal contact and ingestion.
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3. Chemical composition and data on components

Chemical Name	(Substituted-dialkyl(C=1~7)silyl)alkanenitrile
CAS Number	1639345-42-8
Chemical Formula	C ₆ FH ₁₂ NSi

Information on Ingredients

Type	CAS	Substance	Content [wt. %]	
			lower	upper
INHA	1639345-42-8	(Substituted-dialkyl(C=1~7)silyl)alkanenitrile		=100%

Type: HYD – by-product upon hydrolysis, INHA – ingredient, NEBE – by-product, MONO – residual monomer, VERU – impurity, VUL – by-product upon vulcanization. *****Note:** C1 – IARC carcinogen, C2 – NTP carcinogen, C3 – OSHA carcinogen, NH – non-hazardous, R – reproductive toxin.

Substances listed in the Subsections "HAPS" and "California Proposition 65 Carcinogens / Reproductive Toxins" that are not listed in this section are only present at quantities below 0.1% for California Proposition 65 listed toxins or below 1% for non-carcinogenic HAPS or they are inextricably bound in the product. Specific chemical identities and/or exact percentage (concentration) of the composition may have been withheld as a trade secret.

4. First aid measures

General advice	Get medical attention immediately. Before seeking medical attention remove contaminated clothing and shoes. Take a copy of the Safety Data Sheet when going for medical treatment.
Inhalation	If inhaled remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen. Allow cortisone spray inhalation at first possible opportunity.
Skin	If contact with skin, immediately flush skin with plenty of water for at least 15 min. while removing contaminated clothing and shoes. In serious cases, use emergency shower immediately. Apply calcium gluconate gel to affected skin areas.
Eyes	If contact with eyes, immediately hold eyelids apart and flush with plenty of water for at least 15 min. Continue to bathe eyes during transport to medical practitioner.
Ingestion	Get medical attention immediately. If swallowed, rinse mouth with water. Induce drinking plenty of water in small portions. Show label if possible.
Advice for physician	Administer calcium gluconate to counteract the effects of hydrofluoric acid.

5. Fire-fighting measures

Flammable properties:

Property:	Value:	Method:
Flash point	83°C (181°F)	(ISO 3679)
Boiling Point:	202.4°C (396°F) at 1013 hPA	(OECD 103)
Lower explosion limit (LEL)	No data available	
Upper explosion limit (UEL)	No data available	
Ignition temperature	376°C (709°F) by EN 14522	(EN14522)
NFPA Hazard Class (comb./flam.liquid)	IIIA	(EN 14522)

Fire and explosion hazards:	OSHA combustible liquid and vapor. Material may form toxic and corrosive gasses in case of fire.
Extinguishing media	Foam, carbon dioxide, dry chemical. Medium expansion AFFF alcohol compatible foam.
Unsuitable extinguishing media	Water.

Special fire-fighting measures	<p>Avoid eye and skin contact. Do not breathe fumes or inhale vapors.</p> <p>Fire fighters should wear full protective clothing including a positive pressure self-contained breathing apparatus. Cool endangered containers with water. In case of fire remove container out of endangered area.</p>
Specific Hazards	<p>Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame. This product will not mix with water. Combustion products may include fluorinated organic compounds, highly toxic substances, hydrogen fluoride, silicon dioxide and incompletely burnt hydrocarbons</p>
Fire Fighting Procedures	<p>Fire fighters should wear full protective clothing including a positive pressure self-contained breathing apparatus. Cool endangered containers with water. In case of fire remove container out of endangered area.</p>

6. Accidental release measures

Precautions	<p>Secure the area. Wear personal protection equipment (see section 8). Keep unprotected persons away. Avoid contact with eyes and skin. Do not inhale gases/vapors/aerosols. Do not walk through spilled material. Ensure adequate ventilation. If material is released indicate risk of slipping.</p> <p>HAZWOPER PPE LEVEL: A</p>
Containment	<p>Prevent material from entering surface waters, drains or sewers and soil. Close leak if possible without risk. Contain any fluid that runs out using suitable material (e.g. earth). Retain contaminated water/extinguishing water. Dispose of in prescribed marked containers. Inform authorities if substance leaks into surface waters, sewerage or ground.</p> <p>Spills of material which could reach surface waters must be reported to the United States Coast Guard National Response Center's toll free phone number (800) 424-8802.</p>
Environmental precautions	<p>May be hazardous to aquatic life if released to open waters.</p>
Methods for clean up	<p>Take up mechanically and dispose of according to local/state/federal regulations. Do not flush away with water. For small amounts: Absorb with a neutral (non-acidic / non-basic)</p>

	liquid binding material such as diatomaceous earth and dispose of according to government regulations. For large amounts: Liquids may be recovered using suction devices or pumps. If flammable, only air driven or properly rated electrical equipment should be used. Clean any slippery coating that remains using a detergent / soap solution or another biodegradable cleaner. Silicone fluids are slippery; spills are a safety hazard. Apply sand or other inert granular material to improve traction.
Recommended disposal	Absorb into clay or vermiculite and dispose of absorbent material as solid waste. Follow all chemical pollution control regulations.
Further Information	Exhaust vapors. Eliminate all sources of ignition. Consider explosion protection. Observe notes under section 7.

7. Handling and storage

General Information	Avoid exposure by technical means or PPE.
Handling	Hygroscopic. Absorbs water readily from the air. Handle under dry inert gas. Handle with gloves. Avoid eye and skin contact. Do not breathe fumes or inhale vapors. Ensure adequate ventilation. Must be syphoned off in situ. Avoid formation of aerosols. In case of aerosol formation special protective measures are required (exhausting by suction, respiratory protection). At each withdrawn superimpose with nitrogen, afterwards reseal containers carefully. Spilled substances increase the risk of slipping. Keep away from incompatible substances in accordance with section 10. Observe information in section 8.
Precautions against fire and explosion	Flammable vapors may accumulate and form explosive mixtures with air in containers, process vessels, including partial, empty and uncleaned containers and vessels, or other enclosed spaces. Keep away from sources of ignition and do not smoke. Take precautionary measures against electrostatic charging. Cool endangered containers with water.
Storage	Hygroscopic. Protect against moisture. Store in the original container. Absorbs water readily from the air. Store in sealed containers in a cool, dry, well-ventilated environment. Make sure there is no possibility of entering the ground. Observe all local/state/federal regulations.

8. Exposure controls and personal protection

Engineering Controls	Use only with adequate ventilation. Local exhaust ventilation which meets the requirements of ANSI Z9.2 is recommended to control airborne contaminants at the point of use.
Personal Protective Equipment	
Respiratory protection	A supplied respirator (either airline or SCBA) is required if overexposure to highly toxic vapors or poison gasses could occur.
Eye & face protection	Chemical worker's goggles.
Hand protection	Viton rubber, nitrile, or Silvershield / 4H laminate gloves
Other protection	An eyewash and emergency shower must be available. Use tightly fitting chemical protection suit. Launder clothes before reuse. Avoid contact with eyes skin and clothing. Avoid breathing dust/vapor/mist/gas/aerosol. When handling do not eat, drink, smoke, or apply cosmetics. Wash thoroughly after handling.

Associate substances with specific control parameters

Maximum airborne concentrations at the workplace

CAS No.	Material	Type	mg/m ³	ppm	Dust fract.
7664-39-3	Hydrogen fluoride	OSHA PEL		3.0	
7664-39-3	Hydrogen fluoride	ACGIH TWA		0.5	

9. Physical and chemical properties

Appearance	Colorless liquid
Odor	Strong
Odor Threshold	Not Determined
pH	2.6 at RT (335 g/l H ₂ O)
Melting Point	-56 °C
Boiling Point	202.4 °C at 1013 hPa by OECD 103
Flash Point	83 °C by ASTM D3278
Evaporation Rate	Not Determined
Flammability Limits	Not Determined
Explosion Limits	Not Determined
Vapor Pressure at 20 °C	7.9 hPa at 20 °C
Vapor Density	Not Determined
Density	0.927 g/cc at RT
Viscosity	2.0 cP at RT
Decomposition Temp	Not Determined

Autoignition Temp	376 °C by EN 14522
Partition Coefficient	Not Determined
Solubility	Acetone, Ethanol, MEK Insoluble in water
Molecular Weight	145
Water Content	< 20 ppm

10. Stability and reactivity

General Information	If stored and handled in accordance with standard industrial practices no hazardous reactions are known
Reactivity	
Stability	Stable unless exposed to moisture
Hazardous Decomposition Products	Under effect of humidity, water, and protic agents: HF
Hazardous Polymerization	No

11. Toxicological information

Acute Toxicity Tests	Aerosol mist must not be inhaled as lung damage can be expected. LC50(4h), rat: < 0.05 mg/L (as mist) Known
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Route of Exposure	Result/Effect	Species/Test System	Source
Oral	LD ₅₀ : 500 mg/kg (LD ₅₀ cut-off according to ATC method)	Rat (female)	Test report OECD 423
Dermal	LD ₅₀ : > 2000 mg/kg Neither mortality nor clinical signs of toxicity were observed with the given dose.	Rat (both sexes)	
Inhalation	LD ₅₀ : >0.5 but ≤ 2.0 mg/l	Rat (both sexes)	Test report OECD 436

Skin Corrosion/Irritation

Result/Effect	Species/Test System	Source
Not corrosive	In vitro method	Test report OECD 431
Mildly irritating	Semi-occlusive; rabbit	Test report OECD 404

Serious Eye Damage/Eye Irritation

Result/Effect	Species/Test System	Source
Not corrosive	In vitro method	Test report OECD 437
Mildly irritating	rabbit	Test report OECD 405

Respiratory or skin sensitization

Route of exposure	Result/Effect	Species/Test System	Source
dermal	sensitizing	Mouse; LLNA (local lymph node assay)	Test report OECD 429

Germ Cell Mutagenicity

Result/Effect	Species/Test System	Source
Negative (with and without metabolic activation)	Mutation assay (in vitro) Bacterial cells	Test report OECD 471

Carcinogenicity No data known

Reproductive Toxicity No data known

Specific Target Organ Toxicity (single exposure) No data known

Specific Target Organ Toxicity (repeated exposure) No data known

Aspiration Hazard No data known

Further Toxicological Information

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Other information: Hydrolysis product / impurity: In case of relevant exposure hydrogen fluoride and its aqueous solution (hydrofluoric acid) cause severe burns to skin, eye and the mucosa of the respiratory and digestive tract. Acute toxicity: Hydrogen fluoride is classified as very toxic by inhalation, dermal contact and ingestion.

12. Ecological information

Acute Ecotoxicity Tests	Result/Effect	Species/Test system	Source
	LC ₅₀ : 94 mg/L	Static zebra fish (Danio rerio) (96 h)	Test report OECD 203
	EC ₅₀ : > 100 mg/L	Static Daphnia magna (48 h)	Test report OECD 202
	EC ₅₀ (growth rate): > 46 mg/L	Static Desmodesmus subspicatus (72 h)	Test report OECD 201
	NOEC (respiratory inhibition): 32 mg/L	Sludge (3 h)	Test report OECD 209

Peristence and degradability

Result	Test system/method	Source
43.9% / 28 d	Biological oxygen demand (BOD)	Test report OECD 301F

Bioaccumulative potential No data known

Mobility in soil No data known

Other adverse effects No data known

13. Disposal considerations

Appropriate Method of Disposal Liquid; May be incinerated. Alternately, absorb onto clay or vermiculite and dispose of absorbent material as solid waste. Follow all chemical pollution control regulations.

14. Transport information

UN Number	UN 3287
UN proper shipping name	Toxic liquid, inorganic, n.o.s.
Packing Group	II
Environmental Hazards	Harmful to aquatic life with long lasting effects.

15. Regulations

US Federal Regulations

TSCA inventory status and TSCA information Not all ingredients are listed on the TSCA Inventory. This is a research and development material and must be handled under the supervision of a technically qualified person.

TSCA 12(b) Export Notification This material does not contain reportable amounts of any TSCA 12(b) listed chemicals

CERCLA Regulated Chemicals This material does not contain any CERCLA regulated chemicals.

SARA 302 EHS Chemicals	This material does not contain any SARA extremely hazardous substances.
SARA 311/312 Hazard Class	This is a research and development hazard classification has not been fully determined
SARA 313 Chemicals	This material does not contain any SARA 313 chemicals above de minimus levels.

US State Regulations

California Proposition 65 Carcinogens	This material does not contain any chemicals known to the State of California to cause cancer
California Proposition 65 Reproductive Toxins	This material contains no listed components.
Massachusetts Substance List	This material contains no listed components.
New Jersey Right-to-Know Hazardous Substance List	This material contains no listed components.
Pennsylvania Right-to-Know Hazardous Substance List	This material contains no listed components.

Details of international registration status

European Economic Area (EEA)	REACH (Regulation (EC) No 1907/2006): General note: the registration obligations for substances imported into the EEA or manufactured within the EEA by the supplier mentioned in section 1 are fulfilled by the said supplier. The registration obligations for substances imported into the EEA by customers or other downstream users must be fulfilled by the latter.
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16. Other information

DISCLAIMER	Not for drug, household or other uses.
Revision Date:	2018-08-24

This Safety Data Sheet (SDS) meets the requirements of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief accurate and reliable as of the date compiled. However, no representation, warranty or guarantee expressed or implied, is made as to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information. Nothing herein shall be construed as a recommendation for uses which infringe valid patents or as extending a license under valid patents. This SDS provides selected regulatory information on this product, including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations, and laws relating to the product being used.

Glossary of Terms:

ACGIH – American Conference of Governmental Industrial Hygienists	Ppm – parts per million
DOT – Department of Transportation	SARA Superfund Amendments and Reauthorization Act
hPa - Hectopascals	STEL – Short Term Exposure Limit
mPa*s – Milli Pascal-Seconds	TSCA – Toxic Substances Control Act
OSHA – Occupational Safety and Health Administration	TWA – Time Weighted Average
PEL – Permissible Exposure Limit	WHMIS – Canadian Workplace Hazardous Materials Identification System