





SOUTHERN IONICS MATERIALS, LLC (SIM)
SAFETY DATA SHEET

SDS NO. 002
 Effective Date: 12/01/2015
 Revision Date: 02/07/2017

I. Product and Company Information

SIM Product Name(s):	Rare Earth Mineral Sand	Synonym:	Monazite
Chemical Name:	Monazite Sand	CAS Number:	1306-41-8
Manufacturer's Name: Southern Ionics Minerals, LLC 13291 Vantage Way, Suite 103 Jacksonville, FL 32218 Website: www.simineralsllc.com		Emergency Contacts: For Emergency Incident Information Call CHEMTREC at 1-800-424-9300 CHEMTREC CCN - 20596	

II. Hazard Identification

OSHA HCS / GHS Classification(s):		Hazard Statement(s):	
Skin Irritation (Category 2)		Causes skin irritation	
Eye Irritation (Category 2B)		Causes eye irritation	
Specific Target Organ Toxicity – Respiratory (Category 2)		May cause damage to lungs through prolonged or repeated inhalation. Typical product particle size is greater than the 10 micron respirable limit.	
Carcinogenicity (Category 1A)		May cause cancer by inhalation	
Signal Word:	Precautionary Statement(s):		
Warning	Prevention:	Wash thoroughly after handling	
Symbol(s): 		Wear protective gloves/protective clothing	
		Avoid breathing dust/fume/gas/mist/vapors/spray	
		Use personal protective equipment as required	
		Do not handle until all safety precautions have been read and understood	
	Response:	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.	
		IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse.	
		IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
		IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.	
		IF EXPOSED OR CONCERNED: Get medical advice/attention.	
Additional Label Information:		CANCER HAZARD: Repeated and prolonged inhalation of respirable crystalline silica can cause lung cancer and delayed lung damage (silicosis).	
Hazards Not Otherwise Classified:		This product contains naturally occurring radioactive material (NORM) due to the contents of uranium and thorium in monazite. Personnel handling monazite would receive radiation dose which should be limited to 30 mSv per annum and 100 mSv for five years (composite) period as per the stipulation of Atomic Energy Regulatory Board (AERB).	

III. Composition / Information on Ingredients

Chemical Name:	CAS Reg #'s	%
Monazite	1306-41-8	60%
Xenotime	13817-22-6	7-10%
Staurolite	12182-56-8	12-15%
Zirconium Silicate	14940-68-2	12-15%
Titanium Dioxide	13463-67-7	0.5 – 1.0%
Comments:	Respirable Crystalline Silica < 0.01%	

IV. First Aid Measures

Inhalation:	Remove from source of exposure into fresh air and seek medical attention if any symptoms persist. Get medical attention immediately if evidence of contamination with radioactive particles.
Dermal / Skin:	No specific first aid is required for skin contact. Remove contaminated clothing and wash off skin with soap and/or water thoroughly. Upon completion of washing, monitor the victim for radioactivity. Seek medical attention if any irritation or soreness of the skin develops.
Eye Contact:	Hold eye as open and rinse continuously with a gentle stream of clean running water for at least 15 minutes. Monitor for radioactivity and rewash the eyes until little or no radioactivity is present. Seek medical attention if any irritation or soreness of eye persists.
Ingestion:	In the case of ingestion of radioactive substances, the mouth should be rinsed out immediately. Care should be taken not to swallow the water used for this purpose. Get medical attention if you feel unwell.
Note to Physician:	Treat symptomatically and supportively.

V. Fire Fighting Measures

NFPA Hazard Rating:	Health (Blue)	Fire (Red)	Reactivity (Yellow)	Special Instructions (White)
	3	2	1	
NFPA Hazard Classification: 0 = Least 1 = Slight 2 = Moderate 3 = High 4 = Extreme				
Extinguishing Media:	Dry chemical, carbon dioxide, water spray or regular foam. For larger fires, use water spray or fog.			
Special Firefighting Procedure:	Do not move damaged containers; move undamaged containers out of fire zone. Keep unnecessary people out of area until declared safe by radiological response team.			
Specific hazards arising from the chemical:	Thermal decomposition may release toxic and/or hazardous gases.			

VI. Accidental Release Measures

Precaution if Spilled or Released:	Do not touch damaged containers or spilled material. For large spills, dike far ahead of spill for later disposal. For dry spills, cover with plastic tarp to minimize spreading. Keep unnecessary people at least 150 feet upwind of spill. Isolate hazard area and deny entry. Limit entry to shortest time possible. Clean up should be performed only by qualified worker(s).
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VII. Handling and Storage

Handling:	Wear protective equipment as specified for handling. Sweep or vacuum up, reuse or dispose of. Avoid generation of dust.
Storage:	Store in a controlled area in suitable containers in accordance with 10 CFR 20. Observe all Federal, State, and local regulations when storing this substance.

VIII. Exposure Control / Personal Protective Equipment



Component Workplace Control Parameters:

Components:	CAS-No.	Value	Parameters	Basis
Nuisance Dust		TWA	5.0 mg/m ³	OSHA (respirable fraction)
Silica, Crystalline Quartz	14808-60-7	TWA	0.02 mg/m ³	ACGIH (respirable fraction)
Yttrium	7440-65-5	TLV	1 mg/m ³	ACGIH (OSHA PEL)
Uranium	7440-61-1	TLV	0.2 mg/m ³	ACGIH (as U)

Engineering Controls: At a minimum, provide local exhaust or process enclosure ventilation. Depending upon the specific workplace activity, a more stringent ventilation system may be necessary to comply with OSHA exposure limits and those set forth in 10 CFR 20.103. One method of controlling external radiation exposure is to provide adequate shielding.

General Hygiene: Cigarette smoking increases the toxic effects by decreasing pulmonary function.

Personal Protection Equipment:

Eye:		Wear eye protection to prevent eye contact with this substance. Contact lenses should not be worn. Provide an eye wash station within the immediate area for emergency use.		
Skin:		Wear impervious clothing and appropriate protective gloves to prevent repeated or prolonged skin contact with this substance.		
Respiratory:		Use NIOSH/MSHA approved respiratory protection (air purifying or air supplying) with a type 100 (high efficiency particulate cartridge or canister) where concentrations are above airborne exposure limits.		
Other Protective Items:		Meeting the exposure limits for respirable crystalline silica (quartz) and respirable particulates is protective against inhalation exposure to NORMs.		
CERLA Rating (Scale 0-3):	Health	Fire	Reactivity	Persistence
	2	2	1	3

IX. Physical and Chemical Properties

Chemical formula:	(RE + Th) PO ₄ + ZrO ₂	pH:	6.2 - 6.8
Color:	Greenish brown	LOI:	0.1%
Odor:	Odorless	Vapor Pressure:	Not pertinent
Specific Gravity:(H₂O=1)	5.2	Melting Point:	1900°C to 2000°C
Vapor Density: (Air=1)	Not applicable	% Volatiles:	None
Hardness:	7.5 in Mohr's Scale	Flammability:	Not combustible
Crystal system:	Monoclinic, Prismatic	Bulk Density:	3200 to 3400 kg/m ³
Flash Point:	None	Grain Size	-35 + 100 mesh
Solubility in water:	Insoluble	Other:	

X. Stability and Reactivity Data

Reactivity	Stable under normal temperatures and pressures.
Chemical Stability:	Hazardous polymerization has not been reported to occur under normal temperature and pressure.
Conditions To Avoid:	Prevent dispersion of dust in air. Thorium dioxide may burn but does not ignite readily.
Incompatible Materials:	None in normal or expected use.
Hazardous products of Decomposition:	Thermal decomposition may release toxic and/or hazardous gases.

XI. Toxicological Information

Routes of Entry:	<input checked="" type="checkbox"/> Eyes <input checked="" type="checkbox"/> Skin <input checked="" type="checkbox"/> Ingestion <input checked="" type="checkbox"/> Inhalation					
Sign and symptoms of Exposure:	May cause irritation to eyes, skin, and respiratory passages.					
Eye Contact:	Contact may result in mechanical (abrasive) irritation. An effect of eye irradiation is cataract formation.					
Ingestion:	Effects of ingestion are due to mechanical action. Repeated ingestion of alpha emitters may lead to increased cancer risk.					
Skin Contact:	Contact may result in mechanical (abrasive) irritation. Skin abrasions may cause scarring.					
Inhalation:	Exposures to high concentrations may cause physical discomfort of the upper respiratory tract. Monazite sand contains a small amount of respirable crystalline silica (up to 0.01%) and precautions should be taken to avoid inhaling the dust. The normal grain size of the product precludes it from being an inhalation hazard. The effects of chronic exposure by internally deposited alpha radiation is dependent upon the dose and target organ(s). Possible disorders include lung cancer, anemia, leukemia, or bone cancer.					
Carcinogenicity: Respirable Crystalline Silica (Quartz)	NTP	Known	IARC	Group 1	OSHA	
Ingredient Name:	Species		Test		Route	Results
Crystalline Silica (Quartz)	Rat		>11,000 mg/kg		Oral	ALD
Crystalline Silica (Quartz)	Carp		>10,000 mg/L		Aquatic	LC 50

XII. Ecological Information

Ingredient Name:	Species	Test	Period	Results
Comments:	This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. The material is unlikely to cause any environmental damage. It is insoluble in water and is unlikely to contaminate waterways or food chains.			

XIII. Disposal Considerations

Waste Disposal:	Recover, reclaim or recycle when practical. Disposal must be in accordance with federal, state, and local regulations. If approved, may be transferred to an approved landfill site. Consult and comply with current regulations regarding disposal of waste containing NORMs above background levels.
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XIV. Transportation Information

Proper Shipping Name:	To be determined on a case by case basis				
Hazard Classification:	To be determined on a case by case basis				
Identification Number:	TBD	Packing Group:	TBD	Other Labels:	TBD
Comments:	Transport is regulated and may be transported as a radioactive material. Classification of substances with multiple hazards must be determined in accordance with criteria regulated by the U.S. Department of Transportation (DOT), International Air Transportation Association (IATA), International Civil Aviation Organization (ICAO) and International Maritime Organization (IMDG).				

XV. Regulatory Information

TSCA Status	Yes	SARA Section 302 (40 CFR 355.30)	No
CERCLA Section 103 (40 CFR 302.4)	No	SARA Section 304 (40 CFR 355.40)	No
OSHA Process Safety (29 CFR 1910.119)	No	SARA Section 313 (40 CFR 372.65)	Yes
California Proposition 65	Yes		
SARA Hazard Categories, SARA Sections 311/312 (40 CFR 370.21)			
Acute Hazard	Yes	Fire Hazard	No
Chronic Hazard	Yes	Reactivity Hazard	No
		Sudden Release Hazard	No
Radiological Protection: This is subjected to regulatory guidelines as prescribed by the Atomic Energy Regulatory Board (AERB). The regulations pertaining to radiological protection vary from country to country. It is the responsibility of the buyer to ensure that those are met in accordance with his/her country law.			

XVI. Other Information

NSF Certification:	
Other:	_____
Revision Notes:	_____
MSDS Replacements:	<u>SIM MSDS Monazite Sand Products</u>

SALES OFFICE 13291 Vantage Way, Suite 103 Jacksonville, FL 32218 TEL: 904-741-0090	For Product Information: TEL: 912-647-0301 FAX: 904-741-0091
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IMPORTANT

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