

Scandium Nitrate Hydrate

sc-258144



The Power is Question

Material Safety Data Sheet

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

Scandium Nitrate Hydrate

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

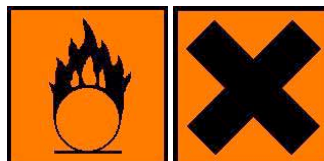
N3-O9-Sc, Sc(NO₃)₃.xH₂O, "nitric acid, scandium(3+) salt, hydrate", "samarium trinitrate"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

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

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



CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Contact with combustible material may cause fire.
Contact with acids liberates toxic gas.
Irritating to eyes.
Harmful to aquatic organisms.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

- 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. liver, kidney) damage is evident.
- Accidental ingestion of the material may be damaging to the health of the individual.
- The substance and/or its metabolites may bind to hemoglobin inhibiting normal uptake of oxygen. This condition, known as "methemoglobinemia", is a form of oxygen starvation (anoxia).

EYE

- This material can cause eye irritation and damage in some persons.

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.
- Skin contact is not thought to have harmful health effects, however the material may still produce health damage following entry through wounds, lesions or abrasions.
- There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.
- 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

- Although inhalation is not thought to produce harmful effects, the material may still produce health damage, especially where pre-existing organ (e.g. liver, kidney) damage is evident.
- 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.
- Exposure to vapors of some rare earth salts can cause sensitivity to heat, itching, and increased sensitivity of smell and taste. Other effects include inflamed airways and lung, emphysema, regional narrowing of terminal airways and cell changes.
- 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.

CHRONIC HEALTH EFFECTS

- Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified using animal models); nevertheless exposure by all routes should be minimized as a matter of course. 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.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
scandium(III) nitrate	13465-60-6	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

· If swallowed do NOT induce vomiting. · If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

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

- The toxicity of nitrates and nitrites result from their vasodilating properties and their propensity to form methemoglobin.
- Most produce a peak effect within 30 minutes.
- Clinical signs of cyanosis appear before other symptoms because of the dark pigmentation of methemoglobin.

Section 5 - FIRE FIGHTING MEASURES

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

EXTINGUISHING MEDIA

■ FOR SMALL FIRE:

- USE FLOODING QUANTITIES OF WATER.
- DO NOT use dry chemicals, CO2 or 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 800 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Will not burn but increases intensity of fire.
 - Heating may cause expansion or decomposition leading to violent rupture of containers.
- Decomposition may produce toxic fumes of: nitrogen oxides (NOx), metal oxides.

FIRE INCOMPATIBILITY

- Avoid storage with reducing agents.
- Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous.

PERSONAL PROTECTION

Glasses:

Full face- shield.

Gloves:

Respirator:

Particulate

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Clean up all spills immediately.
- No smoking, naked lights, ignition sources.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid personal contact and inhalation of dust, mist or vapors.
- Provide adequate ventilation.

RECOMMENDED STORAGE METHODS

■ Glass container.

- DO NOT repack. Use containers supplied by manufacturer only.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure.

STORAGE REQUIREMENTS

■ In addition, Goods of Class 5.1, packing group II should be:

- stored in piles so that
- the height of the pile does not exceed 1 metre
- the maximum quantity in a pile or building does not exceed 1000 tonnes unless the area is provided with automatic fire extinguishers
- the maximum height of a pile does not exceed 3 metres where the room is provided with automatic fire extinguishers or 2 meters if not.
- the minimum distance between piles is not less than 2 metres where the room is provided with automatic fire extinguishers or 3 meters if not.
- the minimum distance to walls is not less than 1 metre.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
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US - Idaho - Acceptable Maximum Peak Concentrations	scandium(III) nitrate (Lead and its inorganic compounds (Z37.11-1969))	0.2	
Canada - Ontario Occupational Exposure Limits	scandium(III) nitrate (Elemental lead, inorganic and organic compounds of lead, as Pb except tetraethyl lead / Plomb élémentaire, composés inorganiques et organiques du plomb, en Pb, sauf le plomb tétraéthyle)	0.05	Skin (organic compounds) / Peau (composés organiques)
US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)	scandium(III) nitrate (BORON AND COMPOUNDS)	0.01	
US - Oregon Permissible Exposure Limits (Z-3)	scandium(III) nitrate (Inert or Nuisance Dust: (d) Total dust)	10	Oregon Permissible Exposure Limits (PELs) are different than the federal limits.
US OSHA Permissible Exposure Levels (PELs) - Table Z3	scandium(III) nitrate (Inert or Nuisance Dust: (d) Respirable fraction)	5	
US OSHA Permissible Exposure Levels (PELs) - Table Z3	scandium(III) nitrate (Inert or Nuisance Dust: (d) Total dust)	15	
US - Hawaii Air Contaminant Limits	scandium(III) nitrate (Particulates not other wise regulated - Total dust)	10	
US - Hawaii Air Contaminant Limits	scandium(III) nitrate (Particulates not other wise regulated - Respirable fraction)	5	
US - Oregon Permissible Exposure Limits (Z-3)	scandium(III) nitrate (Inert or Nuisance Dust:(d) Respirable fraction)	5	Oregon Permissible Exposure Limits (PELs) are different than the federal limits.
Canada - Ontario Occupational Exposure Limits	scandium(III) nitrate (Particles (Insoluble or Poorly Soluble) Not Otherwise)	10 (I)	

Canada - British Columbia Occupational Exposure Limits	scandium(III) nitrate (Particles (Insoluble or Poorly Soluble) Not Otherwise Classified (PNOC))		10 (N)	
Canada - Ontario Occupational Exposure Limits	scandium(III) nitrate (Specified (PNOS) / Particules (insolubles ou peu solubles) non précisées par ailleurs)		3 (R)	
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	scandium(III) nitrate (Particulates not otherwise regulated Respirable fraction)		5	
US - California Permissible Exposure Limits for Chemical Contaminants	scandium(III) nitrate (Particulates not otherwise regulated Respirable fraction)		5	(n)
US - Oregon Permissible Exposure Limits (Z-1)	scandium(III) nitrate (Particulates not otherwise regulated (PNOR) (f) Total Dust)	-	10	Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal Limits. PNOR means "particles not otherwise regulated."
US - Michigan Exposure Limits for Air Contaminants	scandium(III) nitrate (Particulates not otherwise regulated, Respirable dust)		5	
US - Oregon Permissible Exposure Limits (Z-1)	scandium(III) nitrate (Particulates not otherwise regulated (PNOR) (f) Respirable Fraction)	-	5	Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal Limits. PNOR means "particles not otherwise regulated."
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air	scandium(III) nitrate (Particulates not otherwise regulated)		5	

Contaminants	(PNOR)(f)- Respirable fraction)		
Canada - Prince Edward Island Occupational Exposure Limits	scandium(III) nitrate (Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles)	10	See Appendix B current TLV/BEI Book

ENDOELTABLE

PERSONAL PROTECTION



RESPIRATOR

•Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

EYE

- Chemical goggles.
- Full face shield.

HANDS/FEET

■ Wear chemical protective gloves, eg. PVC.

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, AS/NZS 2161.1 or national equivalent).

· 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, AS/NZS 2161.10.1 or national equivalent) 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, AS/NZS 2161.10.1 or national equivalent) 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.

· DO NOT wear cotton or cotton-backed gloves.

· DO NOT wear leather gloves.

· Promptly hose all spills off leather shoes or boots or ensure that such footwear is protected with PVC over-shoes.

OTHER

· Overalls.

· PVC Apron.

· Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.

· For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets), non sparking safety footwear.

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.

Mixes with water.

Contact with acids liberates toxic gas.

State	Divided solid	Molecular Weight	230.97
Melting Range (°F)	Not available	Viscosity	Not Applicable
Boiling Range (°F)	Not available.	Solubility in water (g/L)	Miscible
Flash Point (°F)	Not applicable	pH (1% solution)	Not available
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapour Pressure (mmHG)	Negligible

Upper Explosive Limit (%)	Not Applicable	Specific Gravity (water=1)	Not available
Lower Explosive Limit (%)	Not Applicable	Relative Vapor Density (air=1)	Not applicable.
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

APPEARANCE

White, hygroscopic crystalline powder; mixes with water.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable under normal handling conditions.

STORAGE INCOMPATIBILITY

- Contact with acids produces toxic fumes.

for metal nitrates:

- Segregate from heavy metals, phosphides, sodium acetate, lead nitrate, tartrates, trichloroethylene,
 - Avoid shock and heat.
 - Mixtures of metal nitrates with alkyl esters may explode due to the formation of unstable alkyl nitrates.
 - Mixtures of a nitrate with phosphorous, tin(II) chloride and other reducing agents may react explosively.
 - Mixtures containing nitrates and organic materials are potentially dangerous, especially if acidic materials or heavy metals are present.
 - Fibrous organic material, jute, wood and similar cellulosic material can become highly combustible by nitrate impregnation
 - Metal nitrates are incompatible with cyanides, thiocyanates, isothiocyanates and hypophosphites. Avoid reaction with the following which can cause an explosion: barium thiocyanate, boron phosphide, cyanides, sodium hypophosphite, sulfur and charcoal, powdered aluminium or aluminium oxide, sodium thiosulfate.
 - Mixtures of metal nitrates and phosphinates may explode on heating
 - A mixture of aluminium powder, water and metal nitrate may explode due to a self accelerating reaction.
 - Mixtures containing nitrates, nitrites and organic materials are potentially dangerous, especially in the presence of acidic materials and heavy metals.
 - **WARNING:** Avoid or control reaction with peroxides. All transition metal peroxides should be considered as potentially explosive. For example transition metal complexes of alkyl hydroperoxides may decompose explosively.
 - The pi-complexes formed between chromium(0), vanadium(0) and other transition metals (haloarene-metal complexes) and mono- or poly-fluorobenzene show extreme sensitivity to heat and are explosive.
 - Avoid reaction with borohydrides or cyanoborohydrides.
 - 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.
 - Inorganic reducing agents react with oxidizing agents to generate heat and products that may be flammable, combustible, or otherwise reactive. Their reactions with oxidizing agents may be violent.
 - Incidents involving interaction of active oxidants and reducing agents, either by design or accident, are usually very energetic and examples of so-called redox reactions.
 - Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous.
- Avoid storage with reducing agents.

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

Section 11 - TOXICOLOGICAL INFORMATION

scandium(III) nitrate

TOXICITY AND IRRITATION

SCANDIUM(III) NITRATE:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.
- Lanthanide poisoning causes immediate defecation, writhing, incoordination, labored breathing, and inactivity. Respiratory and heart failure may follow causing death.

For scandium and compounds:

The pure metal is not considered to be toxic. Though a transition metal, it has historically been sometimes classified as a rare earth element, together with yttrium and the lanthanoids.

For scandium chloride the intraperitoneal and oral LD50s are 755 mg./kg. and 4000 mg./kg., respectively. Studies of chronic toxicity showed no body weight changes occurred in any rodent group except the male rats on a 1% dietary level. The haemograms of all animals were within the normal range. Histopathological examination of the tissues revealed no damage related to the ingestion of scandium chloride. Transient ocular irritation was observed and the chemical produced extensive scar formation when applied to abraded skin. Pharmacological studies indicated that the chemical had a depressant action on all systems studied and produced lethality by respiratory paralysis coupled with cardiovascular collapse. The lethal effects could not be counteracted by atropinization or epinephrine administration.

Lanthanoids entering the human body due to exposure to various industrial processes can affect metabolic processes. Trivalent lanthanoid ions, especially lanthanum 3+ and gadolinium 3+, can interfere with calcium channels in human and animal cells. Lanthanoids can also alter or even inhibit the action of various enzymes. Lanthanoid ions found in neurons can regulate synaptic transmission, as well as block some receptors (for example, glutamate receptors). Lanthanoids target the liver causing fatty liver degeneration and a decrease in liver glycogen and blood glucose levels.

Lanthanoids because of their high density can produce significant abnormalities on chest X-rays but these lesions typically have little or no clinical importance. Lanthanoids generally are not felt to be fibrogenic

Based on the available toxicity data, the rare earth chlorides appear to have moderate acute and chronic toxicity. However these substances cause severe eye irritation and severe irritation in abraded skin. They are poorly absorbed by the gastrointestinal tract and by unbroken skin but slight liver damage has been demonstrated in subchronic oral toxicity studies at high doses. The literature indicates that chronic inhalation exposure to the rare earth chlorides may cause pneumoconiosis in humans. There are no indications of carcinogenicity in the rare earth chlorides. Mutagenicity studies on these substances have mixed results, but are predominantly negative.

* IUPAC currently recommends the name lanthanoid rather than lanthanide, as the suffix "-ide" generally indicates negative ions whereas the suffix "-oid" indicates similarity to one of the members of the containing family of elements. In the older literature, the name "lanthanon" was often used.

No significant acute toxicological data identified in literature search.

CARCINOGEN

Lead compounds, organic (NB: Organic lead compounds are metabolized at least in part, to ionic lead both in humans and animals. To the extent that ionic lead, generated from organic lead, is present in the body, it will be expected to exert the toxicities associated with inorganic lead.)	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	3
LEAD COMPOUNDS	US Environmental Defense Scorecard Recognized Carcinogens	Reference(s)	P65
ORGANIC LEAD COMPOUNDS	US Environmental Defense Scorecard Recognized Carcinogens	Reference(s)	P65-MC
LEAD COMPOUNDS	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65
ORGANIC LEAD COMPOUNDS	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65-MC
Lead and lead compounds (inhalation)	US Air Toxics Hot Spots TSD for Describing Available Cancer Potency Factors	IARC Class	2B
Lead and lead compounds (oral)	US Air Toxics Hot Spots TSD for Describing Available Cancer Potency Factors	IARC Class	
PBIT_(PERS~	US - Maine Chemicals of High Concern List	Carcinogen	CA Prop 65; IARC; NTP 11th ROC
PBIT_(PERS~	US - Maine Chemicals of High Concern List	Carcinogen	

Section 12 - ECOLOGICAL INFORMATION

Harmful to aquatic organisms.

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
scandium(III) nitrate	LOW	No Data Available	LOW	HIGH

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / EHS TRN A1a A1b A1 A2 B1 B2 C1 C2 C3 D1 D2 D3 E1 E2 E3 Cas No / RTECS No _____
 _____ Poly(2+)c 224 574 4 4 NR (4) NI (1) (1) (1) (1) (1) CM S 3 ycllc 6 aromatics / CAS:13465 - 60- 6 /

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships) NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acuteaquatic toxicity LC/ECIC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation & corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

A. General Product Information

Ignitability characteristic: use EPA hazardous waste number D001 (waste code I)

Reactivity characteristic: use EPA hazardous waste number D003 (waste code R).

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

! Puncture containers to prevent re-use and bury at an authorized landfill.

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:

· Carefully make a 5% of the solution in water or dilute acid controlling any vigorous exotherm or fumes by rate of addition and cooling.

For small quantities of oxidizing agent:

- Cautiously acidify a 3% solution to pH 2 with sulfuric acid.
- Gradually add a 50% excess of sodium bisulfite solution with stirring.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult Waste Management Authority for disposal.

Section 14 - TRANSPORTATION INFORMATION

DOT:

Symbols: None Hazard class or Division: 5.1

Identification Numbers: UN1477 PG: II

Label Codes: 5.1 Special provisions: IB8, IP2,

IP4, T3,

TP33

Packaging: Exceptions: 152 Packaging: Non- bulk: 212

Packaging: Exceptions: 152 Quantity limitations: 5 kg

Passenger aircraft/rail:

Quantity Limitations: Cargo 25 kg Vessel stowage: Location: A aircraft only:

Vessel stowage: Other: 56, 58

Hazardous materials descriptions and proper shipping names:

Nitrates, inorganic, n.o.s.

Air Transport IATA:

UN/ID Number: 1477 Packing Group: II

Special provisions: A3

Cargo Only

Packing Instructions: 562 Maximum Qty/Pack: 25 kg

Passenger and Cargo Passenger and Cargo

Packing Instructions: Y544 Maximum Qty/Pack: 5 kg

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: 558 Maximum Qty/Pack: 2.5 kg

Shipping Name: NITRATES, INORGANIC, N.O.S.(CONTAINS SCANDIUM(III) NITRATE)

Maritime Transport IMDG:

IMDG Class: 5.1 IMDG Subrisk: None

UN Number: 1477 Packing Group: II

EMS Number: F-A,S-Q Special provisions: None

Limited Quantities: 1 kg

Shipping Name: NITRATES, INORGANIC, N.O.S.(contains scandium(III) nitrate)

Section 15 - REGULATORY INFORMATION

scandium(III) nitrate (CAS: 13465-60-6,16999-44-3) is found on the following regulatory lists;

"Canada Non-Domestic Substances List (NDSL)", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

- Ingestion may produce health damage*.
- May produce discomfort of the respiratory system and skin*.

* (limited evidence).

Ingredients with multiple CAS Nos

Ingredient Name CAS scandium(III) nitrate 13465-60-6, 16999-44-3

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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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