

SAFETY DATA SHEET

Revision Date 01-April-2024 Revision Number 3

1. Identification

Product Name Barium titanium(IV) 2-ethylhexanoate pentaisopropoxide in

isopropanol

Cat No.: 43893

Synonyms No information available

Recommended Use Laboratory chemicals.

Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Importer/Distributor

Fisher Scientific 112 Colonnade Road, Ottawa, ON K2E 7L6, Canada

Tel: 1-800-234-7437

Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

WHMIS 2015 Classification Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

Flammable liquids

Acute oral toxicity

Acute dermal toxicity

Acute Inhalation Toxicity

Serious Eye Damage/Eye Irritation

Specific target organ toxicity (single exposure)

Target Organs - Central nervous system (CNS).

Specific target organ toxicity - (repeated exposure) Category 2

Label Elements

Signal Word

Danger

Barium titanium(IV) 2-ethylhexanoate pentaisopropoxide in isopropanol

Hazard Statements

Highly flammable liquid and vapor
Fatal if swallowed, in contact with skin or if inhaled
Causes serious eye irritation
May cause drowsiness and dizziness
May cause damage to organs through prolonged or repeated exposure



Precautionary Statements

Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Keep container tightly closed

Ground/bond container and receiving equipment

Do not breathe dust/fumes/gas/mist/vapours/spray

Do not get in eyes, on skin, or on clothing

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

Wear protective gloves/protective clothing/eye protection/face protection

Wear respiratory protection

Use non-sparking tools

Take action to prevent static discharges

Response

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower

IF INHALED: Remove person to fresh air and keep comfortable for breathing

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a POISON CENTER/doctor

Rinse mouth

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

Take off contaminated clothing and wash it before reuse

Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Other Hazards

Toxic to aquatic life with long lasting effects

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Isopropyl alcohol	67-63-0	86.60
Barium titanium(IV) 2-ethylhexanoate	N/A	13.4
pentaisopropoxide		

4. First-aid measures

General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In

the case of contact with eyes, rinse immediately with plenty of water and seek medical

advice.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical

attention is required.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth

method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Immediate medical attention is required.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Most important symptoms/effects Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like

headache, dizziness, tiredness, nausea and vomiting

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water mist may be used to cool closed containers.

Unsuitable Extinguishing Media No information available

Flash Point Method -No information available

No information available

Autoignition Temperature

Explosion Limits

No information available

Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO2). Barium oxides. Titanium oxides.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health Flammability Instability Physical hazards
4 3 0 -

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required. Keep people

away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources

of ignition. Take precautionary measures against static discharges.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Should not be released into the

environment. Do not allow material to contaminate ground water system.

Methods for Containment and Clean Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Up

Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

Storage.

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame.

8. Exposure controls / personal protection

Exposure Guidelines

Component	Alberta		Ontario TWAEV	Quebec	ACGIH TLV	OSHA PEL	NIOSH
		Columbia					
Isopropyl alcohol	TWA: 200 ppm	(Vacated) TWA:	IDLH: 2000 ppm				
	TWA: 492	STEL: 400 ppm	STEL: 400 ppm	STEL: 400 ppm	STEL: 400 ppm	400 ppm	TWA: 400 ppm
	mg/m³					(Vacated) TWA:	TWA: 980
	STEL: 400 ppm					980 mg/m ³	mg/m³
	STEL: 984					(Vacated) STEL:	STEL: 500 ppm
	mg/m³					500 ppm	STEL: 1225
						(Vacated) STEL:	mg/m³
						1225 mg/m ³	
						TWA: 400 ppm	
						TWA: 980	
						mg/m³	

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof

electrical/ventilating/lighting/equipment.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control

hazardous materials at source

Personal protective equipment

Eye Protection Goggles

Hand Protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Glove material	Breakthrough time	Glove thickness	Glove comments
Nitrile rubber	See manufacturers	-	Splash protection only
Viton (R)	recommendations		

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European

Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly **Recommended Filter type:** Multi-purpose/ABEK conforming to EN14387 low boiling organic solvent Type AX Brown conforming to EN371 or Organic gases and vapours filter Type A Brown

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

9. Physical and chemical properties

Physical State Liquid

Appearance
Odor
No information available
No data available

Melting Point/RangeNo data availableBoiling Point/RangeNo information availableFlash PointNo information availableEvaporation RateNo information available

Flammability (solid,gas) Not applicable

Flammability or explosive limits

Upper
Lower
No data available
No data available
Vapor Pressure
Vapor Density
No information available
Specific Gravity
No information available
Solubility
No information available
No data available
No data available
No data available

Autoignition Temperature

Decomposition Temperature

Viscosity

No data available
No information available
No information available
No information available

Molecular Formula C23 H50 BaO7 Ti

Molecular Weight 623.89

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Moisture sensitive.

Conditions to Avoid Keep away from open flames, hot surfaces and sources of ignition.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO2), Barium oxides, Titanium oxides

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous ReactionsNone under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. Category 2.

ATE = 5 - 50 mg/kg.

Dermal LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. Category 1.

ATE < 50 mg/kg.

Vapor LC50 Based on ATE data, the classification criteria are not met. ATE > 20 mg/l. Category 2. ATE

= 0.5 - 2 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Isopropyl alcohol	5045 mg/kg (Rat)	12800 mg/kg (Rat)	72.6 mg/L (Rat) 4 h
	3600 mg/kg (Mouse)		

Toxicologically Synergistic

No information available

Products

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Isopropyl alcohol	67-63-0	Not listed				
Barium titanium(IV)	N/A	Not listed				
2-ethylhexanoate						
pentaisopropoxide						

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental EffectsNo information available.

Teratogenicity No information available.

STOT - single exposure Central nervous system (CNS)

STOT - repeated exposure None known

Aspiration hazard No information available

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delayed

Symptoms / effects,both acute and Inhalation of high vapor concentrations may cause symptoms like headache, dizziness,

tiredness, nausea and vomiting

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Isopropyl alcohol	EC50: > 1000 mg/L, 72h	LC50: = 9640 mg/L, 96h	= 35390 mg/L EC50	13299 mg/L EC50 = 48 h
	(Desmodesmus	flow-through (Pimephales	Photobacterium	9714 mg/L EC50 = 24 h
	subspicatus)	promelas)	phosphoreum 5 min	_
	EC50: > 1000 mg/L, 96h	LC50: > 1400000 µg/L, 96h		
	(Desmodesmus	(Lepomis macrochirus)		

subspicatus)	LC50: = 11130 mg/L, 96h	
. ,	static (Pimephales	
	promelas)	
	LC50: = 10000000 µg/L, 96h	
	(Daphnia)	
	, , ,	

Persistence and Degradability

May persist based on information available.

Bioaccumulation/ Accumulation

No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

Component	log Pow
Isopropyl alcohol	0.05

13. Disposal considerations

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN1219
Proper Shipping Name UN1219
ISOPROPANOL

Hazard Class 3
Packing Group ||

TDG

UN-No UN1219

Proper Shipping Name ISOPROPANOL

Hazard Class 3 Packing Group II

<u>IATA</u>

UN-No UN1219

Proper Shipping Name ISOPROPANOL

Hazard Class 3
Packing Group ||

IMDG/IMO

UN-No UN1219

Proper Shipping Name ISOPROPANOL

Hazard Class 3
Packing Group

15. Regulatory information

International Inventories

Component	CAS-No	DSL	NDSL	TSCA	TSCA Inventory notification - Active-Inactive	EINECS	ELINCS	NLP
Isopropyl alcohol	67-63-0	X	-	Х	ACTIVE	200-661-7	ı	-
Barium titanium(IV)	N/A	-	-	-	-	-	-	-
2-ethylhexanoate pentaisopropoxide								

Component	CAS-No	IECSC	KECL	ENCS	ISHL	TCSI	AICS	NZIoC	PICCS
Isopropyl alcohol	67-63-0	X	KE-29363	X	X	X	X	Х	Х
Barium titanium(IV) 2-ethylhexanoate	N/A	-	-	-	-	-	-	-	-
pentaisopropoxide									

Barium titanium(IV) 2-ethylhexanoate pentaisopropoxide in isopropanol

Legend:

X - Listed '-' - Not Listed

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

Component	Canada - National Pollutant Release Inventory (NPRI)	Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances	Canada's Chemicals Management Plan (CEPA)
Isopropyl alcohol	Part 1, Group A Substance		
	Part 5, Individual Substances Part 4		
	Substance		

Legend

NPRI - National Pollutant Release Inventory

Other International Regulations

Authorisation/Restrictions according to EU REACH

Component		REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	
Isopropyl alcohol	-	Use restricted. See item 75. (see link for restriction details)	-

REACH links

https://echa.europa.eu/substances-restricted-under-reach

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS-No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Isopropyl alcohol	67-63-0	Listed	Not applicable	Not applicable	Not applicable
Barium titanium(IV) 2-ethylhexanoate pentaisopropoxide	N/A	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS-No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Isopropyl alcohol	67-63-0	Not applicable	Not applicable	Not applicable	Annex I - Y42
Barium titanium(IV) 2-ethylhexanoate pentaisopropoxide	N/A	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

Barium titanium(IV) 2-ethylhexanoate pentaisopropoxide in isopropanol

Prepared By Product Safety Department

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www.thermofisher.com

Revision Date 01-April-2024 Print Date 01-April-2024

Revision Summary New emergency telephone response service provider.

Disclaimer

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End of SDS