

SAFETY DATA SHEET

Creation Date 20-Oct-2015

Revision Date 19-Dec-2025

Revision Number 8

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

1. Identification

Product Name 3,6,9-Triethyl-3,6,9-trimethyl-1,4,7-triperoxynonane, 41% solution in aromatic free mineral spirit

Cat No. : AC349940000; AC349940050; AC349941000

CAS No 24748-23-0
Synonyms Trigonox 301

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

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

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

Flammable liquids	Category 4
Organic peroxides	Type D
Skin Corrosion/Irritation	Category 2
Skin Sensitization	Category 1
Aspiration Toxicity	Category 1

Label Elements

Signal Word
Danger

Hazard Statements

Combustible liquid
Heating may cause a fire
May be fatal if swallowed and enters airways
Causes skin irritation
May cause an allergic skin reaction



Precautionary Statements

Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep away from clothing and other combustible materials
Keep only in original packaging

Skin

IF ON SKIN: Wash with plenty of soap and water
Take off contaminated clothing
If skin irritation or rash occurs: Get medical advice/attention

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor
Do NOT induce vomiting

Fire

In case of fire: Use CO₂, dry chemical, or foam to extinguish

Storage

Store locked up
Store in a well-ventilated place. Keep cool
Protect from sunlight
Store separately

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None identified

Hazards classified under paragraph (d)(1)(ii) of 1910.1200

No information available

3. Composition/information on Ingredients

Component	CAS No	Weight %
Petroleum distillates, hydrotreated light	64742-47-8	59
1,2,4,5,7,8-Hexoxonane, 3,6,9-triethyl-3,6,9-trimethyl-	24748-23-0	41

4. First-aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Get medical attention. Wash off immediately with plenty of water for at least 15 minutes.
Inhalation	Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention. Risk of serious damage to the lungs (by aspiration).
Ingestion	Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.
Most important symptoms and effects	May cause allergic skin reaction. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Water spray, carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
Unsuitable Extinguishing Media	No information available
Flash Point	74 °C / 165.2 °F
Method -	No information available
Autoignition Temperature	180 °C / 356 °F
Explosion Limits	
Upper	No data available
Lower	No data available
Oxidizing Properties	Oxidizer
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Combustible material. Oxidizer: Contact with combustible/organic material may cause fire. Keep product and empty container away from heat and sources of ignition. Risk of ignition. May ignite combustibles (wood paper, oil, clothing, etc.). Containers may explode when heated.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Acetone.

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.

NFPA

Health	Flammability	Instability	Physical hazards
3	2	3	N/A

6. Accidental release measures

Personal Precautions	Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
Environmental Precautions	Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information.
Methods for Containment and Clean Up	Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Remove all sources of ignition.

7. Handling and Storage

Handling	Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from clothing and other combustible materials. Keep away from open flames, hot surfaces and sources of ignition.
Storage.	Do not store near combustible materials. Keep away from heat, sparks and flame. Do not freeze. Keep at temperatures between 10 °C and 40 °C. Keep container tightly closed in a dry and well-ventilated place. Incompatible Materials. Acids. Bases. Metals. Reducing Agent. Strong reducing agents. Combustible material.

8. Exposure controls / personal protection

Exposure Guidelines	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Engineering Measures	Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.
Personal Protective Equipment	
Eye/face Protection	Tight sealing safety goggles. Face protection shield.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	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.
Recommended Filter type:	Organic gases and vapours filter. Type A. Brown. conforming to EN14387.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance			
Physical State	Liquid		
Color	Colorless		
Odor	mild		
Odor Threshold	No information available		
Property	Values	Remarks	Method
Melting Point/Range	< 10 °C / < 50 °F		
Softening Point	No data available		
Boiling Point/Range	No information available		
Flash Point	74 °C / 165.2 °F		Method - No information available

Flammability (liquid)	Combustible liquid	On basis of test data
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Autoignition Temperature	180 °C / 356 °F	
Decomposition Temperature	No data available	
Self-Accelerating Decomposition Temperature (SADT)	110°C	
pH	No information available	
Viscosity	No data available	
Water Solubility	Immiscible	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
1,2,4,5,7,8-Hexoxonane,	4.84	
3,6,9-triethyl-3,6,9-trimethyl-		
Vapor Pressure	<1 hPa (20°C)	
Density / Specific Gravity	0.875	
Bulk Density	Not applicable	Liquid
Vapor Density	No data available	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	
Other Information		
Explosive Properties	explosive air/vapour mixtures possible	
Oxidizing Properties	Oxidizer	

10. Stability and reactivity

Reactive Hazard	Yes
Stability	Oxidizer: Contact with combustible/organic material may cause fire. Stable under recommended storage conditions.
Conditions to Avoid	Incompatible products. Excess heat. Combustible material. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Acids, Bases, Metals, Reducing Agent, Strong reducing agents, Combustible material
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂), Acetone
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Information on expected route of exposure

Inhalation	May cause irritation of respiratory tract.
Ingestion	Ingestion may cause irritation to mucous membranes. Harmful if swallowed. Potential for aspiration if swallowed.
Eyes	Irritating to eyes. Contact with eyes may cause irritation.
Skin	Irritating to skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May cause eye/skin irritation.

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
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Petroleum distillates, hydrotreated light	LD50 > 5000 mg/kg (Rat)	LD50 > 2000 mg/kg (Rabbit)	LC50 > 5.2 mg/L (Rat) 4 h
1,2,4,5,7,8-Hexoxonane, 3,6,9-triethyl-3,6,9-trimethyl-	-	LD50 > 2000 mg/kg (Rat)	-

Toxicologically Synergistic Products No information available

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Based on available data, the classification criteria are not met

(d) respiratory or skin sensitization;

Respiratory No data available
Skin Category 1

May cause sensitization by skin contact

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met
Not mutagenic in AMES Test

(f) carcinogenicity; Based on available data, the classification criteria are not met
The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Petroleum distillates, hydrotreated light	64742-47-8	Not listed	Not listed	Not listed	Not listed	Not listed
1,2,4,5,7,8-Hexoxonane, 3,6,9-triethyl-3,6,9-trimethyl-	24748-23-0	Not listed	Not listed	Not listed	Not listed	Not listed

(g) reproductive toxicity; Based on available data, the classification criteria are not met

(h) STOT-single exposure; Based on available data, the classification criteria are not met

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

Target Organs No information available.

(j) aspiration hazard; Category 1

Symptoms / effects, both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

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

Endocrine Disrupting Properties This product does not contain any known or suspected endocrine disruptors.

12. Ecological information

Ecotoxicity

**3,6,9-Triethyl-3,6,9-trimethyl-1,4,7-triperoxynonane,
41% solution in aromatic free mineral spirit**

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Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants. Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Petroleum distillates, hydrotreated light	Not listed	LC50: = 2.4 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 2.2 mg/L, 96h static (Lepomis macrochirus) LC50: = 45 mg/L, 96h flow-through (Pimephales promelas)	Not listed	Not listed
1,2,4,5,7,8-Hexoxonane, 3,6,9-triethyl-3,6,9-trimethyl-	Not listed	LC50: > 1.4 mg/L, 96h semi-static (Oncorhynchus mykiss)	Not listed	Not listed

Persistence and Degradability Immiscible with water

Bioaccumulation/ Accumulation No information available.

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

Component	log Pow
1,2,4,5,7,8-Hexoxonane, 3,6,9-triethyl-3,6,9-trimethyl-	4.84

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 UN3105
Proper Shipping Name ORGANIC PEROXIDE TYPE D, LIQUID
Hazard Class 5.2
Packing Group II

TDG

UN-No UN3105
Proper Shipping Name ORGANIC PEROXIDE TYPE D, LIQUID
Hazard Class 5.2
Packing Group II

IATA

UN-No UN3105
Proper Shipping Name ORGANIC PEROXIDE TYPE D, LIQUID
Hazard Class 5.2

IMDG/IMO

UN-No UN3105
Proper Shipping Name ORGANIC PEROXIDE TYPE D, LIQUID
Hazard Class 5.2

15. Regulatory Information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Petroleum distillates, hydrotreated light	64742-47-8	X	ACTIVE	-
1,2,4,5,7,8-Hexoxonane, 3,6,9-triethyl-3,6,9-trimethyl-	24748-23-0	X	ACTIVE	PMN;S

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

PMN - Indicates a commenced PMN substance

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical
Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

TSCA 12(b) - Notices of Export

Component	CAS No	TSCA 12(b) - Notices of Export
1,2,4,5,7,8-Hexoxonane, 3,6,9-triethyl-3,6,9-trimethyl-	24748-23-0	Section 5(a)(2) Section 5(e)

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Petroleum distillates, hydrotreated light	64742-47-8	X	-	265-149-8	X	-		X	X	KE-12550
1,2,4,5,7,8-Hexoxonane, 3,6,9-triethyl-3,6,9-trimethyl-	24748-23-0	X	-	-	-	X	X	X	X	2010-2-58

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

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

Not applicable

Clean Air Act

Not applicable

**OSHA - Occupational Safety and
Health Administration**

Not applicable

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

California Proposition 65

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know
Regulations**

Not applicable

U.S. Department of Transportation

**3,6,9-Triethyl-3,6,9-trimethyl-1,4,7-triperoxynonane,
41% solution in aromatic free mineral spirit**

Revision Date 19-Dec-2025

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade Moderate risk, Grade 2

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Petroleum distillates, hydrotreated light	64742-47-8	-	-	-
1,2,4,5,7,8-Hexoxonane, 3,6,9-triethyl-3,6,9-trimethyl-	24748-23-0	-	Use restricted. See entry 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)
Petroleum distillates, hydrotreated light	64742-47-8	Listed	Not applicable	Not applicable	Not applicable
1,2,4,5,7,8-Hexoxonane, 3,6,9-triethyl-3,6,9-trimethyl-	24748-23-0	Not applicable	Not applicable	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Other International Regulations

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)
Petroleum distillates, hydrotreated light	64742-47-8	Not applicable	Not applicable	Not applicable	Not applicable
1,2,4,5,7,8-Hexoxonane, 3,6,9-triethyl-3,6,9-trimethyl-	24748-23-0	Not applicable	Not applicable	Not applicable	Not applicable

16. Other Information

Prepared By Product stewardship (Regulatory Affairs)
Thermo Fisher Scientific

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Creation Date	20-Oct-2015
Revision Date	19-Dec-2025
Print Date	19-Dec-2025
Revision Summary	Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS