



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
OSHA HCS2012

Revision date 07-Jan-2025

Revision Number 1.01

1. Identification

Product identifier

Product Name Paraoxon

Other means of identification

Product Code(s) TRC-P191850-10G

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use This product is for research and development only

Restrictions on use Not to be used for human or animal consumption

Details of the supplier of the safety data sheet

Supplier Address

VHG
LGC Standards
276 Abby Road
Manchester, NH 03103
UNITED STATES OF AMERICA

Tel : +1 (603) 622-7660
Fax : +1 (603) 622-5180
Email : lgcusa@lgcgroup.com

Web : lgcstandards.com

E-mail sds-request@lgcgroup.com

Emergency telephone number

Emergency Telephone

For Hazardous Materials or Dangerous Goods Incident
Spill, Leak, Fire Exposure, or Accident
Call CHEMTREC:
USA & Canada 1-800-424-9300
Rest of the world +1 703-741-3877

2. Hazard(s) identification



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Classification

Classified according to OSHA.

Acute toxicity - Oral	Category 1
Acute toxicity - Dermal	Category 1
Specific target organ toxicity (single exposure)	Category 1
Hazardous to the aquatic environment - chronic	Category 1

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Danger

Hazard statements

Classified according to OSHA.

Fatal if swallowed

Fatal in contact with skin

Causes damage to organs

Very toxic to aquatic life with long lasting effects



Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

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

Wear protective gloves and protective clothing

Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

IF exposed: Call a POISON CENTER or doctor

IF ON SKIN: Wash with plenty of water and soap

Immediately call a POISON CENTER or doctor

Take off immediately all contaminated clothing and wash it before reuse

IF SWALLOWED: Immediately call a POISON CENTER or doctor

Rinse mouth

Precautionary Statements - Storage



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Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

Very toxic to aquatic life.

3. Composition/information on ingredients

Substance

Formula C10H14NO6P

Chemical name	CAS No.	Weight-%	Trade secret
Paraoxon-ethyl	311-45-5	100	*

4. First-aid measures

Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. IF exposed or concerned: Get medical advice/attention.
Eye contact	Get immediate medical attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing.
Skin contact	Get immediate medical attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Ingestion	Get immediate medical attention. Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed



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Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
Specific hazards arising from the chemical	No information available.
Explosion data	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.
Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.
Other information	Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Take off contaminated clothing and
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wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Please refer to the manufacturer's certificate for specific storage and transport temperature conditions. Store only in the original receptacle unless other advice is given on the CoA. Store locked up. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

Avoid contact with eyes. Wear safety glasses with side shields (or goggles).

Hand protection

Wear suitable gloves. Impervious gloves. The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374. Wear protective butyl rubber gloves.

Skin and body protection

Wear suitable protective clothing. Impervious clothing. Long sleeved clothing. Chemical resistant apron.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Environmental exposure controls

Do not allow into any sewer, on the ground or into any body of water.

General hygiene considerations

Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Wear suitable gloves and eye/face



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protection. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Regular cleaning of equipment, work area and clothing is recommended.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Oily
Color	light yellow
Odor	Slight
Odor threshold	No information available

Property	Values	Remarks • Method
pH	No data available	None known
Melting point / freezing point	169 - 170 °C / 336.2 - 338 °F	None known
Initial boiling point and boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Relative vapor density	No data available	None known
Relative density	1.274 g/cm ³	None known
Water solubility		None known
Solubility(ies)	Methanol Chloroform Ethyl acetate slightly soluble	None known
Partition coefficient	1.98	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information

Explosive properties	No information available
Oxidizing properties	No information available
Softening point	No information available
Molecular weight	275.19
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available

10. Stability and reactivity



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Reactivity No information available.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid None known based on information supplied.

Incompatible materials None known based on information supplied.

Hazardous decomposition products None known based on information supplied.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available. Fatal in contact with skin. (based on components).

Ingestion Specific test data for the substance or mixture is not available. Fatal if swallowed. (based on components).

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Paraoxon-ethyl 311-45-5	= 1800 µg/kg (Rat)	5 mg/kg (Rabbit)	-

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



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Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet complies, this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). Causes damage to organs if swallowed. Causes damage to organs in contact with skin.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Other adverse effects No information available.

Interactive effects No information available.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Paraoxon-ethyl 311-45-5	-	-	-	EC50: 0.0002 mg/L (48h, Daphnia magna)

Persistence and degradability No information available.



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Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Paraoxon-ethyl 311-45-5	1.98

Other adverse effects No information available.

13. Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

US EPA Waste Number P041

14. Transport information

DOT

UN number or ID number UN3278
Extended proper shipping name Organophosphorus compound, liquid, toxic, n.o.s. (Paraoxon-ethyl)
Transport hazard class(es) 6.1
Packing group I
Reportable Quantity (RQ) (Paraoxon-ethyl: RQ (kg)= 45.40) Paraoxon-ethyl: RQ (lb)= 100.00
Reportable quantity (kg) (calculated) Paraoxon-ethyl: RQ (kg)= 45.00
Reportable quantity (lbs) (calculated) Paraoxon-ethyl: RQ (lb)= 100.00
Special Provisions 5, T14, TP2, TP13, TP27
DOT Marine Pollutant P
Marine pollutant Paraoxon-ethyl
Description UN3278, Organophosphorus compound, liquid, toxic, n.o.s. (Paraoxon-ethyl), 6.1, I, Marine pollutant
Emergency Response Guide Number 151

TDG

UN number or ID number UN3278
UN proper shipping name Organophosphorus compound, liquid, toxic, n.o.s. (Paraoxon-ethyl)



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Transport hazard class(es)	6.1
Packing group	I
Special Provisions	16, 115
Description	UN3278, Organophosphorus compound, liquid, toxic, n.o.s. (Paraoxon-ethyl), 6.1, I

MEX

UN number or ID number	UN3278
UN proper shipping name	Organophosphorus compound, liquid, toxic, n.o.s., liquid (Paraoxon-ethyl)
Transport hazard class(es)	6.1
Packing group	I
Technical Name	Paraoxon-ethyl
Description	UN3278, Organophosphorus compound, liquid, toxic, n.o.s., liquid (Paraoxon-ethyl), 6.1, I
Special Provisions	315, 274, 43

IATA

UN number or ID number	UN3278
UN proper shipping name	Organophosphorus compound, liquid, toxic, n.o.s. (Paraoxon-ethyl)
Transport hazard class(es)	6.1
Packing group	I
Technical Name	Paraoxon-ethyl
Description	UN3278, Organophosphorus compound, liquid, toxic, n.o.s. (Paraoxon-ethyl), 6.1, I
Special Provisions	A3, A4, A6, A137
ERG Code	6L

IMDG

UN number or ID number	Not regulated
UN proper shipping name	UN3278
Transport hazard class(es)	Organophosphorus compound, liquid, toxic, n.o.s. (Paraoxon-ethyl)
Packing group	6.1
EmS-No.	I
Special Provisions	F-A, S-A
Marine pollutant	43, 274, 315
Marine Pollutant	P
Description	Paraoxon-ethyl
	UN3278, Organophosphorus compound, liquid, toxic, n.o.s., 6.1, I, Marine pollutant

15. Regulatory information

International Inventories

TSCA

LGC has not confirmed that the chemical substances in this product are on the TSCA Inventory, and LGC is distributing this product solely for use either in applications statutorily exempt from TSCA and regulated under other laws (e.g., FFDCA, FIFRA) or in research and development activities in accordance with the TSCA Inventory R&D exemption provided at 40 CFR 720.36. It is the end-user's responsibility to understand and follow the requirements that apply to its use of this product.



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Chemical name	CAS No.	Inventory Listing Status	Commercial Activity Designation
Paraoxon-ethyl	311-45-5	-	-

*Contact supplier for details. One or more substances in this product are either not listed on the US TSCA inventory, listed on the confidential US TSCA inventory or are otherwise exempted from inventory listing requirements

DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECI	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AIIC	Contact supplier for inventory compliance status.

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing Chemicals Inventory
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US 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)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous	Reportable Quantity (RQ)
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		Substances RQs	
Paraoxon-ethyl 311-45-5	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Paraoxon-ethyl 311-45-5	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	Health hazards 4	Flammability 0	Instability 0	Special hazards -
HMIS	Health hazards 4 *	Flammability 0	Physical hazards 0	Personal protection X
<i>Chronic Hazard Star Legend</i>		<i>* = Chronic Health Hazard</i>		

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AELG(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)



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National Library of Medicine's PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Revision date 07-Jan-2025
Revision Note No information available.

Disclaimer

The information in this Safety Data Sheet meets the requirements of the United States OCCUPATIONAL SAFETY AND HEALTH ACT and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) This document is intended only as a guide to the appropriate precautionary handling of the material by a person trained in, or supervised by a person trained in, chemical handling. The user is responsible for determining the application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, we cannot warn of all of the potential dangers of use or interaction with other chemicals or materials. We warrant that the chemical meets the specifications set forth on the label. We (LGC/VHG/ARMI) disclaim any other warranties, expressed or implied with regard to the product supplied hereunder, its merchantability or its fitness for a particular purpose. The user should recognize that this product can cause severe injury and even death, especially if improperly handled or the known dangers of use are not heeded. Read all precautionary information.

End of Safety Data Sheet