



SAFETY DATA SHEET

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

Revision date 07-Jul-2020

Supersedes Date: 12-Aug-2015

Revision Number 6

1. Identification

Product identifier

Product Name Fyrolflex RDP-HP

Other means of identification

Product Code(s) 7001H

Chemical name Reaction mass of 3-[(diphenoxyphosphoryl)oxy]phenyl triphenyl 1,3-phenylene bis(phosphate) and tetraphenyl 1,3-phenylene bis(phosphate)

Synonyms Phosphoric trichloride, polymer with 1,3-benzenediol, phenyl ester
Phosphoric acid, 1,3-phenylene tetraphenyl ester

Recommended use of the chemical and restrictions on use

Recommended use Flame retardant

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Address

ICL
622 Emerson Road - Suite 500
St. Louis, Missouri 63141, USA
Tel:(314)983-7884 Fax:(314)983-7607
e-mail:msdsinfo@icl-group.com

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300

2. Hazard(s) identification

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards not otherwise classified (HNOC)

Not Applicable

Label elements

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)
The product contains no substances which at their given concentration, are considered to be hazardous to health.

Other information

Not Applicable

3. Composition/information on ingredients**Substance**

Chemical name	CAS No.	Weight-%
Tetraphenyl m-phenylene bis(phosphate)	57583-54-7	99.9

This product can also be described as: CAS No. 125997-21-9 Phosphoric trichloride, polymer with 1,3-benzenediol, phenyl ester (99.9%)

4. First-aid measures**Description of first aid measures**

Inhalation	Supply fresh air; consult doctor in case of symptoms.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.
Ingestion	If swallowed, wash mouth thoroughly with plenty of water. Get medical attention immediately. NOTE: Never give an unconscious person anything to drink

Most important symptoms and effects, both acute and delayed

Symptoms	No information available. .
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically and supportively.
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5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific hazards arising from the chemical	May emit toxic fumes under fire conditions. .
Hazardous combustion products	Carbon oxides. Phosphorus oxides. Phosphoric acids.
Special protective equipment for fire-fighters	Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA). Contain runoff to prevent entry into water or drainage systems.

6. Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Personal precautions	Ensure adequate ventilation.
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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	Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Ventilate area and wash spill site after material pickup is complete. .
Environmental precautions	Should not be released into the environment. See Section 12 for additional Ecological Information.
Reference to other sections	See section 8 for more information. See section 13 for more information.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. .

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. away from incompatible materials (see Section 10).

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.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Tetraphenyl m-phenylene bis(phosphate) 57583-54-7	-	-	-

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection	Chemical safety goggles.
Hand protection Gloves	Protective gloves Neoprene gloves
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. In case of insufficient ventilation, wear suitable respiratory equipment.
Skin and body protection	Wear suitable protective clothing.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Colorless to pale yellow viscous liquid
Color	Colorless to yellowish
Odor	Slight characteristic

Odor threshold	Not determined	
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	no data available	None known
Melting point / freezing point	-13°C / 8.6 °F	None known
Boiling point / boiling range	>400 °C / 752 °F	
Flash point	>230 °C / 446 °F	None known
Evaporation rate	Not determined	None known
Flammability (solid, gas)	Not flammable .	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	2.59x10 ⁻³ Pa (20°C)	None known
Vapor density	Not available	None known
Relative density	1.304 (25°C) 1.304(25°C)	None known
Water solubility	8.9 µg/L	None known
Solubility in other solvents	no data available	None known
Partition coefficient	no data available	None known
Autoignition temperature	. Not self-ignitable	None known
Decomposition temperature	>210°C	None known
Kinematic viscosity	no data available	None known
Dynamic viscosity	600mPas (25°C)	None known
<u>Other information</u>		
Pour Point	-12.22°C (10 °F)	
Oxidizing properties	Not oxidising	
Explosive properties	Product does not present an explosion hazard	
Molecular weight	574.4543	
Bulk density	10.8 lbs/gal @ 25°C	

10. Stability and reactivity

Reactivity	It hydrolyzes slowly at normal temperatures in acidic or alkaline aqueous solutions.
Chemical stability	Stable under normal conditions. .
Possibility of Hazardous Reactions	None under normal processing. .
Conditions to avoid	Heating above decomposition temperature. Under wet alkaline or neutral conditions this product hydrolyzes slowly and nonviolently. Also, hydrolyzes at 150 F (66°C) or above in moist air to form phenol, resorcinol and allyl phosphoric acids. Prevent moisture condensation in the container. .
Incompatible materials	Strong oxidizers, strong acids and strong alkalis.
Hazardous decomposition products	Carbon dioxide and carbon monoxide. Phosphorus oxides.

11. Toxicological information

Information on likely routes of exposure

Product Information

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	No information available.
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Acute toxicity**Numerical measures of toxicity****Component information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Tetraphenyl m-phenylene bis(phosphate) 57583-54-7	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 4.14 mg/l (4-hr) (Rat)

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

Skin corrosion/irritation Not irritant.

Serious eye damage/irritation Not irritant.

Respiratory or skin sensitization Not a sensitizer.

Germ cell mutagenicity Not clastogenic in chromosome aberration test with Human lymphocytes.
Not mutagenic by the Ames Test.
No micronucleus induction was detected in bone marrow erythrocytes of mice.

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

Chemical name	ACGIH	IARC	NTP	US OSHA
Tetraphenyl m-phenylene bis(phosphate) 57583-54-7	-	-	-	-

Reproductive toxicity Does not meet classification criteria. Pregnant rabbits were dosed orally with 50, 200 or 1000 mg/kg/day of this product on days 6 through 28 of gestation. There were no maternal toxicity or teratogenicity at any dose level. In a two-generation study in rats, no adverse effects on reproduction were seen at doses up to 20,000 ppm of this product in the diet.

Developmental toxicity NOAEL 1000 mg/kg bw/day (rat, oral).

STOT - single exposure No effects on specific target organs have been identified.

STOT - repeated exposure Does not meet classification criteria.

Aspiration hazard Not expected.

12. Ecological information**Ecotoxicity**

Note Water solubility 8.9 µg/L
No effects on aquatic organisms occurred at concentrations up to the substances water solubility.

Component information

Chemical name	Algae/aquatic plants	Fish	Crustacea	Toxicity to microorganisms
Tetraphenyl m-phenylene bis(phosphate) 57583-54-7	EC50: > 100 mg/L (48h, Pseudokirchneriella subcapitata)	LC50: > 100 mg/L (96h, Danio rerio)	EC50: > 100 mg/L (48h, Daphnia magna) NOEC: 0.021 mg/L (21 day, Daphnia magna)	-

Persistence and degradability Readily biodegradable.

Bioaccumulation Not expected to bioaccumulate. BCF=969.

Chemical name	Partition coefficient
Tetraphenyl m-phenylene bis(phosphate) 57583-54-7	4.9

Mobility Not Applicable. Readily biodegradable.

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in a safe manner in accordance with local/national regulations.

Contaminated packaging Dispose of in a safe manner in accordance with local/national regulations.

14. Transport information

DOT Not regulated

TDG Not regulated

MEX Not regulated

IATA Not regulated
Special precautions None

IMDG Not regulated
Special precautions None

15. Regulatory information

International Inventories

GHS hazardous component CAS registry numbers appearing in section 3 may differ from substances appearing in section 15 due to country or regional chemical inventory coverage requirements, however, remain in compliance with the inventory. Products that are used as food additives are exempt from listing in international chemical inventories.

Chemical name	TSCA Inventory List Active/Inactive
Tetraphenyl m-phenylene bis(phosphate) 57583-54-7 (99.9)	Present (ACTIVE)

TSCA	Listed or exempted
DSL	Listed or exempted
ENCS	Listed or exempted
IECSC	Listed or exempted
KECL	Listed or exempted
PICCS	Listed or exempted
AICS	Listed or exempted
NZIoC	Not Listed
TCSI	Listed or exempted
NCI	Not Listed
TECI	Listed or exempted

NSQ

Not Listed

Legend:**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**ENCS** - Japan Existing and New Chemical Substances**IECSC** - China Inventory of Existing Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances**AICS** - Australian Inventory of Chemical Substances**NZIoC** - New Zealand Inventory of Chemicals**TCSI** - Taiwan Chemical Substance Inventory**NCI** - Vietnam National Chemicals Inventory**TECI** - Thailand Inventory FDA Existing Chemicals**NSQ** - Mexico National Inventory of Chemical Substances**US Federal Regulations**

Chemical name	U.S. - TSCA (Toxic Substances Control Act) - Section 5(a)(2) - Chemicals with Significant New Use Rules (SNURs)
Tetraphenyl m-phenylene bis(phosphate) - 57583-54-7	-

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. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard 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).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Tetraphenyl m-phenylene bis(phosphate) 57583-54-7	-	-	-	-

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.

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Tetraphenyl m-phenylene bis(phosphate) 57583-54-7	-	-

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

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

This product does not contain any substances regulated by state right-to-know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Tetraphenyl m-phenylene bis(phosphate) - 57583-54-7	-	-	-

U.S. EPA Label Information

EPA Pesticide Registration Number Not Applicable

16. Other information

NFPA	Health hazards 0	Flammability 1	Instability 0	Physical and chemical properties -
HMIS	Health hazards 0	Flammability 1	Physical hazards 0	Personal protection X

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	*	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)
European Chemicals Agency
EPA (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)
National Library of Medicine's PubMed database (NLM PUBMED)
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

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07-Jul-2020

Revision Note

The symbol (*) in the margin of this SDS indicates that this line has been revised.

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End of Safety Data Sheet