SAFETY DATA SHEET

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

Revision date 07-Jul-2020 **Supersedes Date:** 10-May-2018 **Revision Number** 6.1

1. Identification

Product identifier

Product Name FYROLFLEX RDP

Other means of identification

Product Code(s) 7001

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

Chemical Family Aryl 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	95-99

This product can also be described as: CAS No.115-86-6 Triphenyl phosphate (1-5%) CAS No. 125997-21-9 Phosphoric trichloride,polymer with 1,3-benzenediol, phenyl ester (95-99%)

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. .

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically and supportively.

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 Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

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 Protective gloves
Gloves Neoprene™

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 viscous

Color	Colourless light yellow
Odor	Slight characteristic
Odor threshold	Not available

Property	**Values**	**Remarks • Method**
pH	no data available	None known
Melting point / freezing point	-13°C / 8.6 °F	
Boiling point / boiling range	> 400 °C / 752 °F	
Flash point	> 230 °C / 446 °F	
Evaporation rate	no data available	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)	
Vapor density	no data available	None known
Relative density	1.304(25°C)	
Water solubility	8.9 µg/L	
Solubility in other solvents	no data available	None known
Partition coefficient	Log Kow : 4.9	None known
Autoignition temperature	. Not self-ignitable	
Decomposition temperature	>210°C	
Kinematic viscosity	no data available	None known
Dynamic viscosity	600mPas (25°C)	

Other information

Pour Point	-12.22°C (10 °F)
Oxidizing properties	The structure indicates non oxidizing properties
Explosive properties	Product does not present an explosion hazard
Molecular weight	574.45
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 To avoid thermal decomposition, do not overheat.
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.

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 mutagenic in AMES Test.
No micronucleus induction was detected in bone marrow erythrocytes of mice.
Not clastogenic in chromosome aberration test with Human lymphocytes.

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. 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.

Component information

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

Mobility Not relevant. Readily biodegradable.

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Observe all federal, state and local environmental regulations when disposing of this material.

Contaminated packaging Empty containers should be disposed of in accordance with all applicable laws and 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 (95-99)	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) (AEGL(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

Prepared By HERA
e-mail:msdsinfo@icl-group.com

Revision date 07-Jul-2020

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

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, we make no representations as to the completeness or accuracy thereof. Information is supplied to you upon the condition that the persons receiving the information will make their own determination as to its safety and suitability for their purposes prior to use. In no event will we be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information. In addition, we shall not be liable for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices or from any hazards inherent in the nature of the product.

End of Safety Data Sheet