



SAFETY DATA SHEET

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

Revision date 11-Nov-2019

Supersedes Date: 26-Mar-2017

Revision Number 1.1

1. Identification

Product identifier

Product Name Fyrolflex Sol-DP - Pastilles

Other means of identification

Product Code(s) 7023-1

Chemical name The chemical identity of this product is a trade secret.

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-IP America Inc.
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 ALERT-SGS
24 hr Toll Free Number : +800 ALERTSGS (+800-2537-8747)
24 hr Singapore Exchange Number: +65 6542-9595

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Combustible dust	Yes
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Hazards not otherwise classified (HNOC)

Not Applicable

Label elements

This product is not classified as hazardous according to the UN GHS guideline and labeling is not required

Signal word

Warning

Hazard statements

May form combustible dust concentrations in air

Other information

Not Applicable

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

Chemical name	CAS No.	Weight-%
Aryl phosphate trade secret	Proprietary	>95

*The exact percentage (concentration) of composition has been withheld as a trade secret.

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

Inhalation	Remove to fresh air.
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.
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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	Avoid generation of dust. Fine dust dispersed in air may ignite.
Sensitivity to static discharge	Yes.
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. Avoid generation of dust. Avoid contact with eyes. Use
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personal protective equipment as required. Do not breathe dust. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Take precautionary measures against static discharges.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so. Prevent dust cloud.
Methods for cleaning up	Take up with inert, damp, non-combustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal. Pick up and transfer to properly labeled containers.
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. Ensure adequate ventilation. Avoid generation of dust. Do not breathe dust. Avoid contact with eyes. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Store locked up. Keep out of the reach of children.
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8. Exposure controls/personal protection

Control parameters

Exposure Limits	The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.
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Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Aryl phosphate trade secret	-	-	-

Appropriate engineering controls

Engineering controls	Showers Eyewash stations Ventilation systems
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Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Hand protection	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 Do not breathe dust.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Light yellow pastilles
Color	light yellow
Odor	Slight mildew or earthy smell

Property	Values	Remarks • Method
pH	7	(5% w/w)
Melting point / freezing point	102 - 104°C (216 - 219°F)	
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	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	< 5.6x10 ⁻⁷ Pa (20°C)	
Vapor density	No data available	None known
Relative density	~1350 kg/m ³	
Water solubility	0.0187 µg/l (20°C)	
Solubility in other solvents	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	> 620°C (>1148°F)	
Decomposition temperature	326°C	
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	
Other information		
Oxidizing properties	No data available	
Explosive properties	No data available	
Bulk density	7.7-8.2 lb/gal	
Particle Size	Not determined	

10. Stability and reactivity

Reactivity	No reactive hazards known/expected.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Sensitivity to static discharge	Yes.
Conditions to avoid	Excessive heat. Heating in air. dust formation. Exposure to moisture.
Incompatible materials	Strong acids. Strong bases.
Hazardous decomposition products	Carbon dioxide and carbon monoxide. Phosphorus oxides.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation May cause irritation of respiratory tract.

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
Aryl phosphate trade secret	> 5000 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	>5.23 mg/L (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 Mild Irritant. Does not meet classification criteria.

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. In vivo mouse bone marrow cytogenicity: not mutagenic.

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

Chemical name	ACGIH	IARC	NTP	US OSHA
Aryl phosphate trade secret	-	-	-	-

Reproductive toxicity The NOAEL >1000 mg/kg/day (rats). There were no effects on mating, pregnancy, litter size and pup survival.

Developmental toxicity Daily oral gavage administration of Fyrolflex SOL-DP to female rabbits up to and including 1000 mg/kg/day did not cause adverse effects upon maternal parameters or embryo-fetal survival, growth and development. NOAEL 1000 mg/kg bw/day (rat, oral)

STOT - single exposure No information available.

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

NOAEL >1000 mg/kg bw /day (90 days oral, rat)

Chronic toxicity No data available

Neurological effects Not neurotoxic.

Aspiration hazard Not expected to occur.

12. Ecological information

Ecotoxicity**Note**

Due to the extremely low water solubility, it is technically difficult to perform full aquatic toxicity studies. Thus, the actual level of exposure cannot be determined. It can be reasonably assumed that aquatic organisms will not be directly exposed to the substance.

Component information

Chemical name	Algae/aquatic plants	Fish	Crustacea	Toxicity to microorganisms
Aryl phosphate trade secret	-	-	-	Activated sludge respiration inhibition test: EC50 > 414 mg/l

Persistence and degradability

Not readily biodegradable
In the Closed Bottle Test, this product biodegraded 8% at day 28.

Bioaccumulation

BCF=212. The substance does not fulfil the requirement of Annex XIII, Para 1.2 and cannot be considered to be "B" or "vB".

Component information

Chemical name	Partition coefficient
Aryl phosphate trade secret	4.98

Other adverse effects

No data available.

13. Disposal considerations

Waste treatment methods**Waste from residues/unused products**

Dispose of in accordance with local regulations.

Contaminated packaging

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

14. Transport information

IMDG

Not regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

ICAO/IATA

Not regulated

DOT

Not regulated

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

TSCA

Listed or exempted

DSL

Listed or exempted

ENCS

Listed or exempted

IECSC

Listed or exempted

KECL	Listed or exempted
PICCS	Not Listed
AICS	Not Listed
NZIoC	Not Listed
TCSI	Listed or exempted
NCI	Not Listed
TECI	Not Listed
NSQ	Not Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - 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)
Aryl phosphate trade secret -	-

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
Aryl phosphate trade secret	-	-	-	-

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
Aryl phosphate trade secret	-	-

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
Phosphoric acid, 1,4-phenylene tetraphenyl ester 51732-57-1	-	-	-

U.S. EPA Label Information

EPA Pesticide Registration Number Not Applicable

16. Other information

NFPA	Health hazards 1	Flammability 1	Instability 0	Physical and chemical properties -
HMIS	Health hazards 1	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
 RTECS (Registry of Toxic Effects of Chemical Substances)
 World Health Organization

Prepared By

HERA
 telephone: +/972-8-6297835
 www.icl-group.com
 e-mail:msdsinfo@icl-group.com

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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