



SAFETY DATA SHEET

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

Revision date 09-Apr-2024

Supersedes Date: 14-Aug-2023

Revision Number 8

1. Identification

Product identifier

Product Name PHOSFLEX 362

Other means of identification

Product Code(s) 7015

Chemical name 2-Ethylhexyl diphenyl phosphate

Recommended use of the chemical and restrictions on use

Recommended use Flame-retardant plasticizer

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
e-mail:msdsinfo@icl-group.com

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300

2. Hazard(s) identification

Classification

Reproductive toxicity	Category 2
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Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Warning

Hazard statements

Suspected of damaging fertility. Suspected of damaging the unborn child



Appearance Clear, transparent liquid	Physical state Liquid	Odor None
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Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/clothing and eye/face protection

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

No information available

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS No.	Weight-%	Trade secret
2-Ethylhexyl diphenyl phosphate	1241-94-7	>95	Sk*
Triphenyl phosphate	115-86-6	<5	Sk*

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

4. First-aid measures

Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
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	Rinse mouth Get medical attention if symptoms occur 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 and irritating fumes under fire conditions.
Hazardous combustion products	Carbon oxides. Phosphorus oxides.
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. Cool containers with water spray. 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. Avoid contact with skin, eyes, and clothing. Wear protective gloves/protective clothing and eye/face protection.

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 Soak up with sand or other suitable absorbant and dispose of as solid waste. Collect in suitable and properly labeled containers. Ventilate area and wash spill site after material pickup is complete.

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. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.

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). Noncorrosive to glass or metals. May soften or deteriorate certain plastics and elastomers (vinyl-based resins and synthetic rubbers). Store locked up.

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.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
2-Ethylhexyl diphenyl phosphate 1241-94-7	-	-	-
Triphenyl phosphate 115-86-6	TWA: 3 mg/m ³	TWA: 3 mg/m ³ (vacated) TWA: 3 mg/m ³	IDLH: 1000 mg/m ³ TWA: 3 mg/m ³

Biological occupational exposure limits

Chemical name	ACGIH
Triphenyl phosphate 115-86-6	60 % of baseline - plasma (Butyrylcholinesterase activity) - end of shift 70 % of baseline - red blood cells (Acetylcholinesterase activity) - end of shift

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

Wear suitable gloves
Neoprene gloves

Skin and body protection

Wear suitable protective clothing.

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

General hygiene considerations

Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear, transparent liquid
Color	Colorless
Odor	None
Odor threshold	Not determined

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	
Melting point / freezing point	-30 °C / -22 °F	
Initial boiling point and boiling range	239 °C / 462.2 °F	10 mmHg
Flash point	224 °C / 435.2 °F	
Evaporation rate	No data available	
Flammability	Not flammable .	
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	0.2 mmHg (150°C)	
Relative vapor density	No data available	
Relative density	No data available	
Water solubility	50.6µg/l at 23.5°C	
Solubility(ies)	No data available	
Partition coefficient	5.87 (25°C)	
Autoignition temperature	.	Not self-ignitable
Decomposition temperature		
Kinematic viscosity	No data available	None known
Dynamic viscosity	16.4 cP (25°C)	
<u>Other information</u>		
Explosive properties	There are no chemical groups associated with explosive properties present in the molecule	
Oxidizing properties	No oxidising properties can be predicted on the basis of chemical structure	
Softening point	No information available	
Molecular weight	No information available	
VOC content	No information available	
Liquid Density	1.09 g/ml (25°C)	
Bulk density	No information available	

10. Stability and reactivity

Reactivity	No reactive hazards known/expected.
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	Acids. Alkalies.
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
2-Ethylhexyl diphenyl phosphate 1241-94-7	15800 mg/kg (Rat) bw	> 7900 mg/kg (Rabbit)	2100 mg/m ³ air (Rat)
Triphenyl phosphate 115-86-6	> 20000 mg/kg (Rat)	> 10000 mg/kg (Rabbit)	> 200000 mg/m ³ (Rat) 1 h

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

Skin corrosion/irritation	Slightly irritating to skin but not sufficient for classification.
Serious eye damage/eye irritation	Slightly irritating. Does not meet classification criteria.
Respiratory or skin sensitization	Not a skin sensitizer
Germ cell mutagenicity	Not mutagenic by the Ames Test and by mouse lymphoma assay.

Carcinogenicity

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

Chemical name	ACGIH	IARC	NTP	OSHA
2-Ethylhexyl diphenyl phosphate 1241-94-7	-	-	-	-
Triphenyl phosphate 115-86-6	-	-	-	-

Reproductive toxicity	Suspected of damaging the unborn child. Suspected of damaging fertility.
STOT - single exposure	Based on available data, the classification criteria are not met.
STOT - repeated exposure	NOAEL 7.3 mg/kg bw /day (90 days oral, rat) Target Organs Digestive System liver Based on the available data, no conclusion can be drawn considering the classification.
Target organ effects	Blood, Peripheral Nervous System (PNS).
Neurological effects	No signs of acute delayed neurotoxicity when administered orally to hens.
Aspiration hazard	Not expected.
Other adverse effects	No information available.

12. Ecological information

Note The aquatic toxicity was tested above the solubility level

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
2-Ethylhexyl diphenyl phosphate 1241-94-7	EC50: =0.2mg/L (72h, Pseudokirchneriella subcapitata)	LC50: >0.38mg/L (96h, Lepomis macrochirus) LC50: >0.38mg/L (96h, Oncorhynchus mykiss) LC50: >0.38mg/L (96h, Pimephales promelas)	-	NOEC: 0.018-0.043 mg/kg (21 days, Daphnia magna)
Triphenyl phosphate 115-86-6	EC50: 0.6 - 4mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 0.4 mg/L (96h)	-	EC50: 0.18-0.32 mg/L (Daphnia magna, 48h)

Persistence and degradability Readily biodegradable - Modified Sturm Test (OECD 301B).

Bioaccumulation Not bioaccumulative.

Bioconcentration factor (BCF) 934

Component Information

Chemical name	Partition coefficient
2-Ethylhexyl diphenyl phosphate 1241-94-7	5.87
Triphenyl phosphate 115-86-6	4.63

Mobility in soil No information available.

Other adverse effects No information available

13. Disposal considerations

Waste treatment methods

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

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

US EPA Waste Number D002.

14. Transport information

DOT Not regulated

TDG Not regulated

MEX Not regulated

IATA Not regulated

IMDG

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. Products that are used as food additives are exempt from listing in international chemical inventories.

For further details on the regulatory status for this product in a specific country, please send your inquiry to the following email address: msdsinfo@icl-group.com

Chemical name	TSCA Inventory List Active/Inactive
2-Ethylhexyl diphenyl phosphate 1241-94-7 (>95)	Present (ACTIVE)
Triphenyl phosphate 115-86-6 (<5)	Present (ACTIVE)

TSCA	Listed or exempted
DSL	Listed or exempted
ENCS	Listed or exempted
IECSC	Listed or exempted
KECI	Listed or exempted
PICCS	Listed or exempted
AIIC	Listed or exempted
NZIoC	Not Listed
TCSI	Listed or exempted
NCI	Listed or exempted
TECI	Not Listed
NSQ	Listed or exempted

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
- AIIC** - Australian Inventory of Industrial Chemicals
- 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

U.S. - TSCA (Toxic Substances Control Act) - Section 5(a)(2) - Chemicals with Significant New Use Rules (SNURs)

Chemical name	U.S. - TSCA (Toxic Substances Control Act) - Section 5(a)(2) - Chemicals with Significant New Use Rules (SNURs)
2-Ethylhexyl diphenyl phosphate - 1241-94-7	-
Triphenyl phosphate - 115-86-6	X

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.

Chemical name	SARA 313 - Threshold Values %
2-Ethylhexyl diphenyl phosphate - 1241-94-7	-
Triphenyl phosphate - 115-86-6	-

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).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
2-Ethylhexyl diphenyl phosphate 1241-94-7	-	-	-	-
Triphenyl phosphate 115-86-6	-	-	-	-

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	Reportable Quantity (RQ)
2-Ethylhexyl diphenyl phosphate 1241-94-7	-	-	
Triphenyl phosphate 115-86-6	-	-	

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
2-Ethylhexyl diphenyl phosphate 1241-94-7	-	-	-
Triphenyl phosphate 115-86-6	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	Health hazards 3	Flammability 1	Instability 0	Special hazards -
HMIS	Health hazards 3 Sk*	Flammability 1	Physical hazards 0	Personal protection X

*Chronic Hazard Star Legend** = *Chronic Health Hazard***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)
 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)
 National Institute of Technology and Evaluation (NITE)
 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)
 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

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Revision Note

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

Disclaimer

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