

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Description: Triphenyl phosphate
Cat No. : 147670000; 147670010; 147670025; 147672500
CAS No 115-86-6
Molecular Formula C18 H15 O4 P

Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals.
Uses advised against No Information available

Details of the supplier of the safety data sheet

Importer Fisher Scientific Korea D5,D6, Incheon Airport Logistics Complex 150, Gonghangdong-Ro Mapo-Gu 296 Beon-Gil Jung-Gu, Incheon 400-340 Tel: +82-2-6196-5500 Fax: +82-2-6196-5501	Supplier Acros Organics BVBA Janssen Pharmaceuticaaan 3a 2440 Geel, Belgium
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E-mail address Chem.KR@thermofisher.com

Emergency Telephone Number

Emergency telephone: Medical: +(82) 070-7686-0086 or + 1-703-741-5970
 CHEMTREC: 1-800-424-9300 or + 1-703-527-3887
 Korea: 00-308-13-2549 (24 hours a day, 7 days a week)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture
Physical hazards

Based on available data, the classification criteria are not met

Health hazards

Based on available data, the classification criteria are not met

Environmental hazards

Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

Label Elements

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Signal Word

Warning

Hazard Statements

H410 - Very toxic to aquatic life with long lasting effects

H400 - Very toxic to aquatic life

Precautionary Statements

Prevention

P273 - Avoid release to the environment

Response

P391 - Collect spillage

Disposal

P501 - Dispose of contents/container to industrial incineration plant

Other Hazards

Toxic to terrestrial vertebrates

Contains a known or suspected endocrine disruptor

Contains a substance on the National Authorities Endocrine Disruptor Lists

NFPA

Health
1

Flammability
1

Instability
0

Physical hazards
N/A

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	Common Name	CAS No	Index No	Weight %
Triphenyl phosphate	No information available	115-86-6	KE-34739	99 - 100

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

Ingestion

Do NOT induce vomiting. Get medical attention.

Inhalation

Remove to fresh air. Get medical attention if symptoms occur. If not breathing, give artificial respiration.

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.

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Most important symptoms and effects, both acute and delayed

None reasonably foreseeable.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Oxides of phosphorus, Phosphorus trihydride (phosphine).

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes or clothing.

Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods and Material for Containment and Cleaning Up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.

Conditions for Safe Storage, Including any Incompatibilities

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Keep containers tightly closed in a dry, cool and well-ventilated place.

Specific End Uses

Use in laboratories.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Component	CAS No	Korea	ACGIH TLV	OSHA PEL
Triphenyl phosphate	115-86-6	TWA: 3 mg/m ³	TWA: 3 mg/m ³	(Vacated) TWA: 3 mg/m ³ TWA: 3 mg/m ³

Component	CAS No	European Union	The United Kingdom	Germany
Triphenyl phosphate	115-86-6	Not listed	STEL: 6 mg/m ³ 15 min TWA: 3 mg/m ³ 8 hr	TWA: 12.5 mg/m ³ (8 Stunden). AGW - exposure factor 2 TWA: 10 mg/m ³ (8 Stunden). MAK Höhepunkt: 20 mg/m ³

Biological Exposure Indices

Component	CAS No	Biological Exposure Indices
Triphenyl phosphate	115-86-6	Not listed

Exposure Controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Goggles

Hand Protection

Protective gloves

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Personal protective equipment

Respiratory Protection

Use only those certified by the Korea Occupational Safety and Health Administration.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

Recommended Filter type:

Particulates filter conforming to EN 143

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

When RPE is used a face piece Fit Test should be conducted

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls

Prevent product from entering drains Do not allow material to contaminate ground water system Local authorities should be advised if significant spillages cannot be contained

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (Physical State, Color, etc.) White Solid

Odor

Odorless

Odor Threshold

No data available

pH

No information available

Melting Point/Range

47 - 53 °C / 116.6 - 127.4 °F

Softening Point

No data available

Boiling Point/Range

370 °C / 698 °F

Flash Point

220 °C / 428 °F

Method - No information available

Evaporation Rate

Not applicable

Solid

Flammability (solid,gas)

No information available

Explosion Limits

No data available

Vapor Pressure

1.3 hPa @ 193 °C

Vapor Density

Not applicable

Solid

Specific Gravity / Density

1.3

Bulk Density

No data available

Water Solubility

Insoluble

Solubility in other solvents

No information available

Partition Coefficient (n-octanol/water)

Component	CAS No	log Pow
Triphenyl phosphate	115-86-6	4.63

Autoignition Temperature

500 - °C / 932 - °F

Decomposition Temperature

> 250°C

Viscosity

Not applicable

Solid

Explosive Properties

No information available

Oxidizing Properties

No information available

Molecular Formula

C₁₈ H₁₅ O₄ P

Molecular Weight

326.28

SECTION 10: STABILITY AND REACTIVITY

Reactivity

None known, based on information available

Chemical Stability

Stable under normal conditions.

Possibility of Hazardous Reactions

Hazardous Polymerization

Hazardous polymerization does not occur.

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Hazardous Reactions None under normal processing.

Conditions to Avoid Avoid dust formation. Incompatible products. Excess heat.

Incompatible Materials Oxidizing agent.

Hazardous Decomposition Products Carbon monoxide (CO). Carbon dioxide (CO₂). Oxides of phosphorus. Phosphorus trihydride (phosphine).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

Information on expected route of exposure

Inhalation Not an expected route of exposure.
Ingestion May be harmful if swallowed.
Eyes Avoid contact with eyes.
Skin Avoid contact with skin.

Information on Health Hazards

(a) acute toxicity;

Oral Based on available data, the classification criteria are not met
Dermal Based on available data, the classification criteria are not met
Inhalation Based on available data, the classification criteria are not met

Component	CAS No	LD50 Oral	LD50 Dermal	LC50 Inhalation
Triphenyl phosphate	115-86-6	LD50 = 3500 mg/kg (Rat)	LD50 > 10000 mg/kg (Rabbit)	LC50 > 200000 mg/m ³ (Rat) 1 h

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory No data available
Skin No data available

Component	CAS No	Test method	Test species	Study result
Triphenyl phosphate	115-86-6	No data available	No data available	No data available

(e) germ cell mutagenicity; No data available

Component	CAS No	Test method	Test species	Study result
Triphenyl phosphate	115-86-6	No data available	No data available	No data available

(f) carcinogenicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
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Triphenyl phosphate	115-86-6	No data available	No data available	No data available
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There are no known carcinogenic chemicals in this product

Component	CAS No	IARC	NTP	ACGIH	OSHA	UK
Triphenyl phosphate	115-86-6	Not listed	Not listed	Not listed	Not listed	Not listed

(g) reproductive toxicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
Triphenyl phosphate	115-86-6	No data available	No data available	No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs No information available.

(j) aspiration hazard; Not applicable
Solid

Other Adverse Effects

No information available.

Component	CAS No	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Triphenyl phosphate	115-86-6	Not applicable	Not applicable	Not applicable

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	CAS No	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Triphenyl phosphate	115-86-6	1.2 mg/L LC50 96h 0.47 - 1.04 mg/L LC50 96h 0.53 - 0.8 mg/L LC50 96h 0.81 - 0.94 mg/L LC50 96h 0.28 - 0.5 mg/L LC50 96h	EC50: 0.86 - 1.2 mg/L, 48h (Daphnia magna)	EC50: 0.6 - 4 mg/L, 96h static (Pseudokirchneriella subcapitata)	No data available

Persistence and degradability

Persistence

Degradation in sewage treatment plant

Readily biodegradable

May persist.

Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative potential

Product has a high potential to bioconcentrate

Component	log Pow	Bioconcentration factor (BCF)
Triphenyl phosphate	4.63	84 - 193 dimensionless

Mobility in soil

Spillage unlikely to penetrate soil The product is insoluble and sinks in water Is not likely

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mobile in the environment due its low water solubility. Is not likely mobile in the environment due its low water solubility and propensity to bind to soil particles.

Ozone Depletion Potential

Component	CAS No	Ozone Depletion Potential
Triphenyl phosphate	115-86-6	Not listed

Other adverse effects

No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose in accordance with the Wastes Control Act (폐기물관리법).

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

Other Information

Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not let this chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

Road and Rail Transport

UN-No	UN3077
Proper Shipping Name	Environmentally hazardous substances, solid, n.o.s.
Technical Shipping Name	Triphenyl phosphate
Hazard Class	9
Packing Group	III

IATA

UN-No	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.*
Technical Shipping Name	Triphenyl phosphate
Hazard Class	9
Packing Group	III

IMDG/IMO

UN-No	UN3077
Proper Shipping Name	Environmentally hazardous substances, solid, n.o.s.
Technical Shipping Name	Triphenyl phosphate
Hazard Class	9
Packing Group	III
Marine Pollutant	Dangerous for the environment Product is a marine pollutant according to the criteria set by IMDG/IMO

Special Precautions for User

No special precautions required

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Legend: X - Listed '-' - Not Listed

International Inventories

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Component	CAS No	KECL	TSCA	EINECS	IECSC	DSL	NDSL	PICCS	ENCS	ISHL	AICS
Triphenyl phosphate	115-86-6	KE-34739	X	204-112-2	X	X	-	X	X	X	X

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Triphenyl phosphate	115-86-6	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential
Triphenyl phosphate	115-86-6	Listed	Not applicable	Not applicable

Korean National Regulations

Component	CAS No	Act on Registration and Evaluation of Chemical Substances (K-REACH)	Authorised Chemicals	Existing Substances Subject to Registration
Triphenyl phosphate	115-86-6	Annex 1 - KE-34739	Not applicable	Listed

Component	CAS No	Chemical Control Act - Toxic Chemicals	Chemical Control Act - Prohibited Chemicals	Chemical Control Act - Use Restricted Chemicals
Triphenyl phosphate	115-86-6	2001-1-517 (>25%)	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Accident Precaution Chemicals (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Storage (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Manufacture/Use (% in mixtures)
Triphenyl phosphate	115-86-6	Not applicable	Not applicable	Not applicable

Component	CAS No	Waste Control Law	Ministry of Environment - CMR risk	Ministry of Environment - Critically Controlled Substance
Triphenyl phosphate	115-86-6	> 25% (CCA)	Not applicable	Not applicable

CCA = Chemical Control Act

Component	CAS No	ISHA - Harmful Agents Subject to Work Environment Monitoring	ISHA - Prohibited substances	ISHA - Substances requiring permission
Triphenyl phosphate	115-86-6	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Substances subject to control	ISHA - Harmful Agents Requiring Health Examination	ISHA - Permissible Exposure Limits
Triphenyl phosphate	115-86-6	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Subject to Process Safety Reports (minimum quantity)	ISHA - Threshold Limit Values (TLVs) Chemicals	ISHA - Special management materials
Triphenyl phosphate	115-86-6	Not applicable	TWA: 3 mg/m ³	Not applicable

National Fire Association - Dangerous Substances Minimum quantity requiring a permit

Component	CAS No	Class 1 - Oxidising solids	Class 2 - Flammable solid	Class 3 - Spontaneously Combustible Substances and Dangerous	Class 4 - Flammable liquids	Class 5 - Self-reactive substances	Class 6 - Oxidising liquids

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				Substances When Wet			
Triphenyl phosphate	115-86-6	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Control Parameters

Component	CAS No	Korea	Biological Exposure Indices
Triphenyl phosphate	115-86-6	TWA: 3 mg/m ³	Not listed

US Management Information

OSHA - Occupational Safety and Health Administration

Not applicable

Component	CAS No	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Triphenyl phosphate	115-86-6	Not applicable	Not applicable

CERCLA Not applicable

Component	CAS No	CERCLA EHS RQs	Hazardous Substances RQs	SARA 313 - Threshold Values %
Triphenyl phosphate	115-86-6	Not applicable	Not applicable	Not applicable

CLP Classification - Regulation (EC) No 1272/2008

Warning.

H410 - Very toxic to aquatic life with long lasting effects.

P273 - Avoid release to the environment. P391 - Collect spillage. P501 - Dispose of contents/ container to an approved waste disposal plant.

SECTION 16: OTHER INFORMATION

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

POW - Partition coefficient Octanol:Water

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC (volatile organic compound)

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadviser - LOLI, Merck index, RTECS

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Training Advice

Chemical incident response training.

Creation Date	16-May-2008
Revision Date	01-Apr-2022
Revision Number	4
Revision Summary	SDS sections updated.

MOEL's Public Notice No. 2020-130 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)

Disclaimer

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End of Safety Data Sheet