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**Safety Data Sheet****1. Chemical product and company identification****Product name** : Tris(2-ethylhexyl) phosphate-d51**SDS code** : Q7-12**Company/undertaking identification** :

HAYASHI PURE CHEMICAL IND.,LTD.

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URL : <https://www.hpc-j.co.jp/>**Emergency number** : 06-6910-7305**Recommended use** : For research and experimental use only.**Restrictions on use** : Do not use for any purpose other than research and experiment. Do not use on a human body or for animal medicines, foods, household products, cosmetics, etc. Do not use in the environment.**2. Hazards identification****GHS classification**

Physical hazards	Explosives	No classification	
	Flammable gases	No classification	
	Aerosol	No classification	
	Oxidizing gases	No classification	
	Gases under pressure	No classification	
	Flammable liquids	No classification	
	Flammable solids	No classification	
	Self-reactive substances and mixtures	No classification	
	Pyrophoric liquids	No classification	
	Pyrophoric solids	No classification	
	Self-heating substances and mixtures	classification not possible	
	Substances and mixtures which in contact with water emit flammable gases	No classification	
	Oxidizing liquids	classification not possible	
	Oxidizing solids	No classification	
	Organic peroxides	No classification	
	Corrosive to metals	classification not possible	
	Desensitized explosives	classification not possible	
	Health hazards	Acute toxicity (oral)	No classification
		Acute toxicity (dermal)	No classification
		Acute toxicity (inhalation:gas)	No classification
Acute toxicity (inhalation:vapors)		classification not possible	
Acute toxicity (inhalation:dust/mist)		classification not possible	
Skin corrosion/irritation		Category 2	
Serious eye damage/eye irritation		No classification	
Respiratory sensitization		classification not possible	
Skin sensitization		classification not possible	
Germ cell mutagenicity		classification not possible	
Carcinogenicity	classification not possible		
Reproductive toxicity	classification not possible		
Specific target organ toxicity (single exposure)	classification not possible		

Environmental hazards	Specific target organ toxicity (repeated exposure)	classification not possible
	Aspiration hazard	classification not possible
	Hazardous to the aquatic environment, short-term (acute)	Category 1
	Hazardous to the aquatic environment, long-term (chronic)	Category 1
	Hazardous to the ozone layer	classification not possible

Hazard pictograms (GHS JP)



GHS07



GHS09

Signal word (GHS JP) : Warning

Hazard statements (GHS JP) : Causes skin irritation (H315)  
Very toxic to aquatic life with long lasting effects (H410)

Precautionary statements (GHS JP)

Prevention : Wash hands, forearms and face thoroughly after handling. (P264)  
Avoid release to the environment. (P273)  
Wear protective gloves/protective clothing/eye protection/face protection. (P280)

Response : IF ON SKIN: Wash with plenty of water. (P302+P352)  
If skin irritation occurs: Get medical advice/attention. (P332+P313)  
Take off contaminated clothing and wash it before reuse. (P362+P364)  
Collect spillage. (P391)

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. (P501)

### 3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Name	Concentration or Concentration range	Formula	Kanpo number		CAS RN
			CSCL no	ISHL no	
Tris(2-ethylhexyl) phosphate-d51	≥ 95%, ≤ 100%	C24D51O4P	(2)-2000,(2)-2014	Existing Chemical Substance	1259188-37-8

The above concentration or concentration range are not product specification.

All percentages listed in the above concentration or concentration range are wt%, unless otherwise specified.

### 4. First aid measures

#### First aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
Get immediate medical advice/attention.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing.  
Gently wash with plenty of soap and water.  
Get immediate medical advice/attention.

First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Get immediate medical advice/attention.

First-aid measures after ingestion : Rinse mouth.  
Get immediate medical advice/attention.

## 5. Fire fighting measures

- Suitable extinguishing media : Water spray, Foam, Dry powder, Carbon dioxide, Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.
- Explosion hazard : May induce explosion of containers by heating.
- Hazardous decomposition products in case of fire : In case of fire, product may produce irritative or toxic fumes/gases.
- Firefighting instructions : If ignited, for the initial fire-fighting, cut off combustion sources, extinguish fire at a stroke using appropriate fire-extinguishers.  
In the case of peripheral fire, quickly remove movable containers to safe places.  
If unable to be moved containers, sprinkle water to containers and surrounding equipment, etc. to cool.  
Avoid (reject) fire-fighting water to enter environment.  
Even after extinguishing fire, thoroughly cool containers by using plenty of water.
- Protection during firefighting : Wear appropriate fire-resistant clothing including self contained-compressed air breathing apparatus.

## 6. Accidental release measures

### Personal Precautions, Protective Equipment and Emergency Procedures

- General measures : Before entering, ventilate the area.  
Do not let unauthorized persons come close to the area.  
Immediately place the leakage area in isolation, with taking proper distances for all directions.  
Wear appropriate personal protective devices to prevent inhalation and contact with eye, skin, and clothing, and never attempt to work on the lee.

### Environmental precautions

- Environmental precautions : Avoid release to the environment.  
Prevent entry to sewers and public waters.

### Methods and Equipment for Containment and Cleaning up

- Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it.  
Collect leaking and spilled liquid in sealable containers as far as possible.  
Wash out the spilled area with large amounts of water.

## 7. Handling and storage

### Handling

- Technical measures : Work with appropriate personal protective equipment to prevent inhalation or contact to eyes, skin, and clothing.  
Handle with care to prevent leakage, overflowing, or scattering, minimize generation of mist or vapor, and thoroughly ventilate.
- Precautions for safe handling : Do not eat, drink or smoke when using this product.  
Thoroughly wash your hands and gargle after handling.  
Ensure good ventilation of the work station.  
Do not contact, breathe or swallow.
- Prevents handling of incompatible substances or mixtures : Avoid prolonged or repeated exposure.

### Storage

- Storage conditions : Store locked up.  
Store in a well-ventilated place, away from direct sunlight. Keep container tightly closed and keep away from fire and heat sources.
- Material used in packaging/containers : Light shielding airtight container.
- Technical measures : Comply with applicable regulations.
- Storage temperature : Refrigerate: 2-10°C

## 8. Exposure controls / Personal protection equipment

Appropriate engineering controls : Cover up tightly the generation source at the handling place or install local exhaust equipment or overall ventilation equipment. Install safety showers and eye-fountains near a handling place. Clearly indicate the location.

### Protective equipment

Respiratory protection : Gas mask  
 Hand protection : Impervious protective gloves  
 Eye protection : Protective glasses (general glasses, glasses with side-shields, goggles)  
 Skin and body protection : Impervious aprons, Impervious work clothing, Protective long boots

## 9. Physical and chemical properties

Physical state : Liquid  
 Appearance : Liquid  
 Color : colorless  
 Odor : No data available  
 pH : No data available  
 Melting point : No data available  
 Freezing point : No data available  
 Boiling point : No data available  
 Flash point : No data available  
 Auto-ignition temperature : No data available  
 Decomposition temperature : No data available  
 Flammability (solid, gas) : No data available  
 Vapor pressure : No data available  
 Relative density : No data available  
 Density : 0.99 g/cm<sup>3</sup> (20°C)  
 Relative gas density : No data available  
 Solubility : No data available  
 Partition coefficient n-octanol/water (Log Pow) : No data available  
 Explosive limits (vol %) : No data available  
 Viscosity, kinematic : No data available  
 Particle characteristics : No data available

## 10. Stability and reactivity

Reactivity : No data available  
 Chemical stability : Stable under normal handling conditions.  
 Possibility of hazardous reactions : No data available  
 Conditions to avoid : Sunlight, Heat  
 Incompatible materials : No data available  
 Hazardous decomposition products : No data available

## 11. Toxicological information

The information in this section is based on the "GHS Classification Results" by NITE.

<b>Tris(2-ethylhexyl) phosphate</b>	
Acute toxicity (oral)	No classification
Acute toxicity (dermal)	No classification
Acute toxicity (gas)	No classification
Acute toxicity (vapour)	classification not possible
Acute toxicity (inhalation:dust/mist)	classification not possible
Skin corrosion/irritation	Category 2
Serious eye damage/irritation	No classification
Respiratory sensitization	classification not possible
Skin sensitization	classification not possible

<b>Tris(2-ethylhexyl) phosphate</b>	
Germ cell mutagenicity	classification not possible
Carcinogenicity	classification not possible
Reproductive toxicity	classification not possible
STOT-single exposure	classification not possible
STOT-repeated exposure	classification not possible
Aspiration hazard	classification not possible

## 12. Ecological information

The information in this section is based on the "GHS Classification Results" by NITE.

<b>Tris(2-ethylhexyl) phosphate</b>	
Hazardous to Aquatic Environment - Acute Hazard	Category 1
Hazardous to Aquatic Environment - Chronic Hazard	Category 1
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Hazardous to the ozone layer	classification not possible

## 13. Disposal considerations

- Ecology - waste materials : With the detail information of the waste, subcontract its disposal to a waste disposer authorized by a Prefectural Governor.
- Contaminated container and packaging : Empty the packaging completely prior to disposal.  
Empty containers should be taken for recycle, recovery or waste in accordance with local regulation.

## 14. Transport information

### International Regulations

#### Transport by sea(IMDG)

- UN-No. (IMDG) : 3082
- Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
- Packing group (IMDG) : III
- Transport hazard class(es) (IMDG) : 9
- Hazard labels (IMDG) : 9
- Class (IMDG) : 9
- Special provision (IMDG) : 274, 335, 969
- Limited quantities (IMDG) : 5 L
- Excepted quantities (IMDG) : E1
- Packing instructions (IMDG) : LP01, P001
- Packing provisions (IMDG) : PP1
- IBC packing instructions (IMDG) : IBC03
- Tank instructions (IMDG) : T4
- Tank special provisions (IMDG) : TP1, TP29
- Stowage category (IMDG) : A
- MFAG-No : 171

#### Air transport(IATA)

- UN-No. (IATA) : 3082
- Proper Shipping Name (IATA) : Environmentally hazardous substance, liquid, n.o.s.
- Packing group (IATA) : III
- Transport hazard class(es) (IATA) : 9
- Hazard labels (IATA) : 9
- Class (IATA) : 9
- PCA Excepted quantities (IATA) : E1
- PCA Limited quantities (IATA) : Y964
- PCA limited quantity max net quantity (IATA) : 30kgG
- PCA packing instructions (IATA) : 964
- PCA max net quantity (IATA) : 450L

CAO packing instructions (IATA) : 964  
 CAO max net quantity (IATA) : 450L  
 Special provision (IATA) : A97, A158, A197, A215  
 ERG code (IATA) : 9L

**Marine pollutant** : Applicable

### Regulations in Japan

Regulatory information by sea : Conform to the provisions of the Ship Safety Law.  
 Regulatory information by air : Conform to the provisions of the Civil Aeronautics Law.  
 MFAG-No : 171  
**Special transport precautions** : When transporting, load containers so that they do not tip over, damage, drop or collapse. Make sure there is no leak in containers.

## 15. Regulatory information

### National law

Industrial Safety and Health Law : Not applicable  
 Japanese Poisonous and Deleterious Substances Control Law : Not applicable  
 Fire Service Law : Group 4 - Flammable liquids - 4th Class petroleum (Law Art.2 Para.7, Attached Table 1, Group 4)  
 Foreign Exchange and Foreign Trade Control Act : Export Trade Control Order, Attached Table 1 Para.2  
 Export Trade Control Ordinance appendix 1-16  
 Ship Safety Act : Miscellaneous dangerous substances & articles (Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations)  
 Civil Aeronautics Law : Miscellaneous dangerous substances & articles (Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)  
 Japanese Pollutant Release and Transfer Register Law (PRTR Law) : Class 1 Designated Chemical Substances (Act Art.2 para. 2, Enforcement Order Art.1 Appended Table No.1)  
 Phosphoric acid, tris(2-ethylhexyl) ester (100%)  
 【After amendment of April 2023】  
 Class 1 Designated Chemical Substances (Act, Art.2, Para.2, Enforcement Order, Art.1 Appended Table 1)  
 Tris(2-ethylhexyl) phosphate (100%)

## 16. Other information

Data sources : Handbook of 17322 Chemical Products, The Chemical Daily Co, Ltd.  
 International Chemical Safety Cards.  
 National Institute of Technology and Evaluation (NITE).  
 2020 Emergency Response Guidebook (ERG 2020).  
 Other information : The SDS is copyrighted material of Hayashi Pure Chemical Ind, Ltd.  
 This Safety Data Sheet is intended to be provided for business operators who handle chemical substance products of the relevant product and is not intended to assure safety in any way. The Safety Data Sheet does not verify all the information on the applicable chemical substance in the present time. With the recognition in that unknown danger constantly exists in the relevant chemical substance, the product shall be used in the principle of self-responsibility of the user with the highest priority to safety from transport and unpacking to disposal. When the relevant chemical substance is used, the user him/herself shall collect safety information and shall investigate laws and regulations at the place, organizations, countries, etc. where the substance is actually used and give the highest priority to them. The Company shall take no responsibility for investigating state and local regulations and the user shall handle this problem on his/her own responsibility. In the event that SDS in Japanese and SDS translated into other languages exist, the document described in Japanese is prior to all other documents whether or not there is any difference in contents, and documents in other languages shall be references.