

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

### 1.1. Product identifier

Product Description: Tris(2-cyanoethyl)phosphine  
 Cat No. : 30165  
 CAS No 4023-53-4  
 Molecular Formula C9 H12 N3 P  
 REACH registration number -

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals  
 Uses advised against No Information available

### 1.3. Details of the supplier of the safety data sheet

Company Avocado Research Chemicals Ltd.  
 (Part of Thermo Fisher Scientific)  
 Shore Road, Heysham  
 Lancashire, LA3 2XY,  
 United Kingdom  
 Office Tel: +44 (0) 1524 850506  
 Office Fax: +44 (0) 1524 850608

E-mail address begel.sdsdesk@thermofisher.com

### 1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

#### GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

#### Physical hazards

Based on available data, the classification criteria are not met

#### Health hazards

Acute oral toxicity Category 4 (H302)  
 Acute Inhalation Toxicity - Dusts and Mists Category 3 (H331)

# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

Skin Corrosion/Irritation  
Serious Eye Damage/Eye Irritation  
Carcinogenicity  
Specific target organ toxicity - (single exposure)

Category 2 (H315)  
Category 2 (H319)  
Category 1B (H350)  
Category 3 (H335)

### Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

## 2.2. Label elements



Signal Word

Danger

### Hazard Statements

H302 - Harmful if swallowed  
H331 - Toxic if inhaled  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H335 - May cause respiratory irritation  
H350 - May cause cancer  
EUH208 - Contains Formaldehyde. May produce an allergic reaction

### Precautionary Statements

P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P311 - Call a POISON CENTER or doctor/physician

### Additional EU labelling

Restricted to professional users

## 2.3. Other hazards

This product does not contain any known or suspected endocrine disruptors

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

Component	CAS No	EC No	Weight %	GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Propanenitrile, 3,3',3''-phosphinidynetris-	4023-53-4	EEC No. 223-687-0	99.8	Acute Tox. 3 (H331) Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)

# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

Formaldehyde	50-00-0	200-001-8	0-0.1	STOT SE 3 (H335) Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Skin Corr. 1B (H314) Eye Dam. 1 (H318) Skin Sens. 1 (H317) STOT SE 3 (H335) Muta. 2 (H341) Carc. 1B (H350) EUH071
Acrylonitrile	107-13-1	EEC No. 203-466-5	0-0.1	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Carc. 1B (H350) STOT SE 3 (H335) Aquatic Chronic 2 (H411) Flam. Liq. 2 (H225)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Formaldehyde	Skin Corr. 1B :: C>=25% Eye Irrit. 2 :: 5%<=C<25% Skin Irrit. 2 :: 5%<=C<25% STOT SE 3 :: C>=5%<25% EUH071 :: C>=25%	-	-

Component	ECHA (RAC) ATE (Oral)	ECHA (RAC) ATE (Dermal)	ECHA (RAC) ATE (Inhalation)
Formaldehyde	oral: ATE = 100 mg/kg bw	-	inhalation: ATE = 100 ppmV (gases)

<b>REACH registration number</b>	-
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Full text of Hazard Statements: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

<b>General Advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
<b>Ingestion</b>	Do NOT induce vomiting. Call a physician or poison control center immediately.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.
<b>Self-Protection of the First Aider</b>	Use personal protective equipment as required.

# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

## 4.2. Most important symptoms and effects, both acute and delayed

None reasonably foreseeable.

## 4.3. Indication of any immediate medical attention and special treatment needed

**Notes to Physician** Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

#### **Suitable Extinguishing Media**

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam.

#### **Extinguishing media which must not be used for safety reasons**

No information available.

### 5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

#### **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NO<sub>x</sub>), Oxides of phosphorus.

### 5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

### 6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

### 6.3. Methods and material for containment and cleaning up

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

### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

## Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

## 7.2. Conditions for safe storage, including any incompatibilities

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

**Technical Rules for Hazardous Substances (TRGS) 510**      Class 6.1C  
**Storage Class (LGK) (Germany)**

## 7.3. Specific end use(s)

Use in laboratories

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

#### Exposure limits

List source(s): **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **IRE** - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC

Component	The United Kingdom	European Union	Ireland
Formaldehyde	STEL: 2 ppm 15 min STEL: 2.5 mg/m <sup>3</sup> 15 min TWA: 2 ppm 8 hr TWA: 2.5 mg/m <sup>3</sup> 8 hr Carc.	TWA: 0.37 mg/m <sup>3</sup> (8h) TWA: 0.62 mg/m <sup>3</sup> (8h) TWA: 0.3 ppm (8h) TWA: 0.5 ppm (8h) Skin STEL: 0.74 mg/m <sup>3</sup> (8h) STEL: 0.6 ppm (8h)	TWA: 0.3 ppm 8 hr. TWA: 0.5 ppm 8 hr. for the healthcare, funeral and embalming sectors until July 11, 2024 TWA: 0.37 mg/m <sup>3</sup> 8 hr. TWA: 0.62 mg/m <sup>3</sup> 8 hr. for the healthcare, funeral and embalming sectors until July 11, 2024 STEL: 0.6 ppm 15 min STEL: 0.738 mg/m <sup>3</sup> 15 min STEL: 0.62 mg/m <sup>3</sup> 15 min
Acrylonitrile	STEL: 6 ppm 15 min STEL: 13.2 mg/m <sup>3</sup> 15 min TWA: 2 ppm 8 hr TWA: 4.4 mg/m <sup>3</sup> 8 hr Carc. Skin	TWA: 1 mg/m <sup>3</sup> (8h) TWA: 0.45 ppm (8h) Skin STEL: 4 mg/m <sup>3</sup> (8h) STEL: 1.8 ppm (8h)	TWA: 2 ppm 8 hr. TWA: 4.5 mg/m <sup>3</sup> 8 hr. STEL: 6 ppm 15 min STEL: 13.5 mg/m <sup>3</sup> 15 min Skin

#### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

#### Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Formaldehyde 50-00-0 ( 0-0.1 )			DNEL = 37µg/cm2	DNEL = 240mg/kg bw/day
Acrylonitrile				DNEL = 1.4mg/kg

# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

107-13-1 ( 0-0.1 )			bw/day
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Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Formaldehyde 50-00-0 ( 0-0.1 )	DNEL = 0.75mg/m <sup>3</sup>		DNEL = 0.375mg/m <sup>3</sup>	DNEL = 9mg/m <sup>3</sup>
Acrylonitrile 107-13-1 ( 0-0.1 )	DNEL = 10mg/m <sup>3</sup>		DNEL = 1.8mg/m <sup>3</sup>	

### Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Formaldehyde 50-00-0 ( 0-0.1 )	PNEC = 0.44mg/L	PNEC = 2.3mg/kg sediment dw	PNEC = 4.44mg/L	PNEC = 0.19mg/L	PNEC = 0.2mg/kg soil dw
Acrylonitrile 107-13-1 ( 0-0.1 )	PNEC = 17µg/L	PNEC = 0.0188mg/kg sediment dw		PNEC = 5mg/L	PNEC = 0.00268mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Formaldehyde 50-00-0 ( 0-0.1 )	PNEC = 0.44mg/L	PNEC = 2.3mg/kg sediment dw			
Acrylonitrile 107-13-1 ( 0-0.1 )	PNEC = 17µg/L				

## 8.2. Exposure controls

### Engineering Measures

Use only under a chemical fume hood. 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 (European standard - EN 166)

**Hand Protection** Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments (minimum requirement)
Nitrile rubber	See manufacturers recommendations	-	EN 374	
Neoprene				
Natural rubber				
PVC				

**Skin and body protection** Long sleeved clothing.

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 compatability, 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.

### Respiratory Protection

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

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

# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

<b>Large scale/emergency use</b>	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced <b>Recommended Filter type:</b> Particulates filter conforming to EN 143
<b>Small scale/Laboratory use</b>	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. <b>Recommended half mask:-</b> Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted
<b>Environmental exposure controls</b>	No information available.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

<b>Physical State</b>	Solid	
<b>Appearance</b>	White	
<b>Odor</b>	Odorless	
<b>Odor Threshold</b>	No data available	
<b>Melting Point/Range</b>	97 - 99 °C / 206.6 - 210.2 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	235 °C / 455 °F	@ 0.9 mmHg
<b>Flammability (liquid)</b>	Not applicable	Solid
<b>Flammability (solid,gas)</b>	No information available	
<b>Explosion Limits</b>	No data available	
<b>Flash Point</b>	No information available	<b>Method -</b> No information available
<b>Autoignition Temperature</b>	No data available	
<b>Decomposition Temperature</b>	No data available	
<b>pH</b>	No information available	
<b>Viscosity</b>	Not applicable	Solid
<b>Water Solubility</b>	Slightly soluble	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Component</b>	<b>log Pow</b>	
Formaldehyde	-0.35	
Acrylonitrile	1.05	
<b>Vapor Pressure</b>	No data available	
<b>Density / Specific Gravity</b>	No data available	
<b>Bulk Density</b>	No data available	
<b>Vapor Density</b>	Not applicable	Solid
<b>Particle characteristics</b>	No data available	

### 9.2. Other information

<b>Molecular Formula</b>	C9 H12 N3 P
<b>Molecular Weight</b>	193.19
<b>Evaporation Rate</b>	Not applicable - Solid

## SECTION 10: STABILITY AND REACTIVITY

<b>10.1. Reactivity</b>	None known, based on information available
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### 10.2. Chemical stability

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# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

Stable under normal conditions.

## 10.3. Possibility of hazardous reactions

**Hazardous Polymerization** Hazardous polymerization does not occur.  
**Hazardous Reactions** None under normal processing.

## 10.4. Conditions to avoid

Incompatible products. Excess heat.

## 10.5. Incompatible materials

Strong oxidizing agents. Acids.

## 10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Oxides of phosphorus.

## SECTION 11: TOXICOLOGICAL INFORMATION

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

#### Product Information

(a) acute toxicity;  
**Oral** Category 4  
**Dermal** Based on available data, the classification criteria are not met  
**Inhalation** Category 3

#### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Propanenitrile, 3,3',3''-phosphinidynetris-	1049 mg/kg (Rat)	>2000 mg/kg (Rabbit)	-
Formaldehyde	500 mg/kg (Rat)	LD50 = 270 mg/kg (Rabbit)	0.578 mg/L (Rat) 4 h
Acrylonitrile	LD50 = 193 mg/kg (Rat)	LD50 = 63 mg/kg (Rabbit)	LC50 = 0.47 mg/L (Rat) 4 h

Component	ECHA (RAC) ATE (Oral)	ECHA (RAC) ATE (Dermal)	ECHA (RAC) ATE (Inhalation)
Formaldehyde	oral: ATE = 100 mg/kg bw	-	inhalation: ATE = 100 ppmV (gases)

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;  
**Respiratory** No data available  
**Skin** No data available

Component	Test method	Test species	Study result
Formaldehyde 50-00-0 (0-0.1)	Skin sensitization Test method Patch Test	Man guinea pig	Sensitizer Sensitization
	Respiratory sensitization in vitro		

(e) germ cell mutagenicity; No data available

# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

**(f) carcinogenicity;** Category 1B  
 May cause cancer. The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	EU	UK	Germany	IARC
Formaldehyde	Carc Cat. 1B	Cat 3		Group 1
Acrylonitrile	Carc Cat. 1B		Cat. 2	Group 2B

**(g) reproductive toxicity;** No data available

**(h) STOT-single exposure;** Category 3  
**Results / Target organs** Respiratory system.

**(i) STOT-repeated exposure;** No data available  
**Target Organs** No information available.

**(j) aspiration hazard;** Not applicable  
 Solid

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Symptoms / effects, both acute and delayed** No information available.

## 11.2. Information on other hazards

**Endocrine Disrupting Properties** Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecotoxicity effects** Do not empty into drains.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Formaldehyde	Leuciscus idus: LC50 = 15 mg/L 96h	EC50 = 20 mg/L 96h EC50 = 2 mg/L 48h	EC50 (72h) = 4.89 mg/L (Desmodesmus subspicatus)
Acrylonitrile	LC50: = 24 mg/L, 96h (Oncorhynchus mykiss) LC50: = 25 mg/L, 96h flow-through (Brachydanio rerio) LC50: = 33.5 mg/L, 96h static (Poecilia reticulata) LC50: = 18.07 mg/L, 96h semi-static (Cyprinus carpio) LC50: 8.7 - 10 mg/L, 96h flow-through (Lepomis macrochirus) LC50: 28 - 39 mg/L, 96h static (Pimephales promelas) LC50: 8.0 - 12.0 mg/L, 96h static (Lepomis macrochirus) LC50: 6.7 - 15 mg/L, 96h flow-through (Pimephales promelas)	EC50: = 7.38 mg/L, 48h (Daphnia magna)	

# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

Component	Microtox	M-Factor
Acrylonitrile	EC50 = 254 mg/L 30 min EC50 = 367 mg/L 15 min EC50 = 495 mg/L 5 min EC50 = 6 mg/L 24 h	

## 12.2. Persistence and degradability

**Persistence** May persist, based on information available.

Component	Degradability
Formaldehyde 50-00-0 ( 0-0.1 )	Readily biodegradable (OECD guideline 301A, 301C and 301D) under aerobic and anaerobic conditions.

**12.3. Bioaccumulative potential** May have some potential to bioaccumulate

Component	log Pow	Bioconcentration factor (BCF)
Formaldehyde	-0.35	No data available
Acrylonitrile	1.05	48 dimensionless

**12.4. Mobility in soil** Is not likely mobile in the environment due its low water solubility.

**12.5. Results of PBT and vPvB assessment** No data available for assessment.

## 12.6. Endocrine disrupting properties

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors

## 12.7. Other adverse effects

**Persistent Organic Pollutant** This product does not contain any known or suspected substance  
**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

**Waste from Residues/Unused Products** Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

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

**European Waste Catalogue (EWC)** According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

**Other Information** Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

**14.1. UN number** UN3464

ALFAA30165

# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

**14.2. UN proper shipping name** ORGANOPHOSPHORUS COMPOUND, SOLID, TOXIC, N.O.S.  
**Technical Shipping Name** Propanenitrile, 3,3',3''-phosphinidynetris-, Acrylonitrile  
**14.3. Transport hazard class(es)** 6.1  
**14.4. Packing group** II

**ADR**

**14.1. UN number** UN3464  
**14.2. UN proper shipping name** Organophosphorus compound, toxic, solid, n.o.s.  
**Technical Shipping Name** Propanenitrile, 3,3',3''-phosphinidynetris-, Acrylonitrile  
**14.3. Transport hazard class(es)** 6.1  
**14.4. Packing group** II

**IATA**

**14.1. UN number** UN3464  
**14.2. UN proper shipping name** ORGANOPHOSPHORUS COMPOUND, SOLID, TOXIC, N.O.S.  
**Technical Shipping Name** Propanenitrile, 3,3',3''-phosphinidynetris-, Acrylonitrile  
**14.3. Transport hazard class(es)** 6.1  
**14.4. Packing group** II

**14.5. Environmental hazards** No hazards identified  
**14.6. Special precautions for user** No special precautions required.  
**14.7. Maritime transport in bulk according to IMO instruments** Not applicable, packaged goods

## SECTION 15: REGULATORY INFORMATION

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

**International Inventories**

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Propanenitrile, 3,3',3''-phosphinidynetris-	4023-53-4	223-687-0	-	-	X	X	-	-	X
Formaldehyde	50-00-0	200-001-8	-	-	X	X	KE-17074	X	X
Acrylonitrile	107-13-1	203-466-5	-	-	X	X	KE-29393	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Propanenitrile, 3,3',3''-phosphinidynetris-	4023-53-4	X	ACTIVE	-	X	-	-	-
Formaldehyde	50-00-0	X	ACTIVE	X	-	X	X	X
Acrylonitrile	107-13-1	X	ACTIVE	X	-	X	X	X

**Legend:** X - Listed '-' - Not Listed **KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**Authorisation/Restrictions according to EU REACH**

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)

# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

Propanenitrile, 3,3',3''-phosphinidynetris-	4023-53-4	-	-	-
Formaldehyde	50-00-0	-	Use restricted. See entry 72. (see link for restriction details) Use restricted. See entry 77. (see link for restriction details) Use restricted. See entry 28. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details)	-
Acrylonitrile	107-13-1	-	Use restricted. See entry 28. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details)	-

## REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

## Seveso III Directive (2012/18/EC)

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
Propanenitrile, 3,3',3''-phosphinidynetris-	4023-53-4	Not applicable	Not applicable
Formaldehyde	50-00-0	5 tonne	50 tonne
Acrylonitrile	107-13-1	Not applicable	Not applicable

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

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	Basel Convention (Hazardous Waste)
Propanenitrile, 3,3',3''-phosphinidynetris-	4023-53-4	Not applicable	Not applicable	Not applicable
Formaldehyde	50-00-0	Listed	Not applicable	Not applicable
Acrylonitrile	107-13-1	Listed	Not applicable	Not applicable

## Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

## Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

Take note of Dir 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations

## National Regulations

# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

**WGK Classification** See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Formaldehyde	WGK 3	Krebserzeugende Stoffe - : 5 mg/m <sup>3</sup> (Massenkonzentration)
Acrylonitrile	WGK3	Krebserzeugende Stoffe - Class II : 0.5 mg/m <sup>3</sup> (Massenkonzentration)

Component	France - INRS (Tables of occupational diseases)
Formaldehyde	Tableaux des maladies professionnelles (TMP) - RG 43

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Formaldehyde 50-00-0 ( 0-0.1 )		Group I	

## 15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

## SECTION 16: OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed  
H331 - Toxic if inhaled  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H335 - May cause respiratory irritation  
H350 - May cause cancer  
H225 - Highly flammable liquid and vapor  
H301 - Toxic if swallowed  
H311 - Toxic in contact with skin  
H314 - Causes severe skin burns and eye damage  
H317 - May cause an allergic skin reaction  
H318 - Causes serious eye damage  
H341 - Suspected of causing genetic defects  
H411 - Toxic to aquatic life with long lasting effects

### 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/NDSL** - 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

**DNEL** - Derived No Effect Level

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer  
Predicted No Effect Concentration (PNEC)

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

# SAFETY DATA SHEET

Tris(2-cyanoethyl)phosphine

Revision Date 17-Apr-2026

**NOEC** - No Observed Effect Concentration  
**PBT** - Persistent, Bioaccumulative, Toxic

**POW** - Partition coefficient Octanol:Water  
**vPvB** - very Persistent, very Bioaccumulative

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

**IMO/MDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

## Key literature references and sources for data

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

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

**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)

## Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

**Physical hazards** On basis of test data

**Health Hazards** Calculation method

**Environmental hazards** Calculation method

## Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

**Prepared By** Health, Safety and Environmental Department

**Creation Date** 02-Oct-2012

**Revision Date** 17-Apr-2026

**Revision Summary** .

**This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.**

## Disclaimer

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**End of Safety Data Sheet**