

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

### 1.1. Product identifier

Product Description: **4-Vinylpyridine**  
 Cat No. : **L13316**  
 Synonyms 4-Ethenylpyridine.  
 CAS No 100-43-6  
 EC No 202-852-0  
 Molecular Formula C7 H7 N  
 REACH registration number -

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

Recommended Use Laboratory chemicals.  
 Sector of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites  
 Product category PC21 - Laboratory chemicals  
 Process categories PROC15 - Use as a laboratory reagent  
 Environmental release category ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)  
 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

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

**Physical hazards**

Flammable liquids

Category 3 (H226)

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## Health hazards

Acute oral toxicity	Category 3 (H301)
Acute dermal toxicity	Category 3 (H311)
Acute Inhalation Toxicity - Vapors	Category 3 (H331)
Skin Corrosion/Irritation	Category 1 B (H314)
Serious Eye Damage/Eye Irritation	Category 1 (H318)
Skin Sensitization	Category 1 (H317)

## Environmental hazards

Chronic aquatic toxicity	Category 2 (H411)
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Full text of Hazard Statements: see section 16

## 2.2. Label elements



Signal Word

Danger

## Hazard Statements

H226 - Flammable liquid and vapor  
H301 + H311 + H331 - Toxic if swallowed, in contact with skin or if inhaled  
H314 - Causes severe skin burns and eye damage  
H317 - May cause an allergic skin reaction  
H411 - Toxic to aquatic life with long lasting effects  
EUH071 - Corrosive to the respiratory tract

## Precautionary Statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a POISON CENTER or doctor/physician

## 2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)  
Lachrymator (substance which increases the flow of tears)  
Toxic to terrestrial vertebrates  
This product does not contain any known or suspected endocrine disruptors

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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## 3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
4-Vinylpyridine	100-43-6	EEC No. 202-852-0	>95	Flam. Liq. 3 (H226) Skin Corr. 1B (H314) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Aquatic Chronic 2 (H411)
Hydroquinone	123-31-9	EEC No. 204-617-8	0.0125	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Muta. 2 (H341) Carc. 2 (H351) Aquatic Acute 1 (H400)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Hydroquinone	-	10	-

<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>	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. Remove to fresh air. Immediate medical attention is required.
<b>Self-Protection of the First Aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

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

Causes burns by all exposure routes. May cause allergic skin reaction. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of allergic reaction may

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include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

## 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. Water mist may be used to cool closed containers.

#### **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. The product causes burns of eyes, skin and mucous membranes. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

#### **Hazardous Combustion Products**

Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Hydrogen cyanide (hydrocyanic acid).

### 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

Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges.

### 6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

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

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

### 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

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Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.

## Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

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

Keep in a dry place. Keep container tightly closed. Keep away from heat, sparks and flame. Store in freezer. Keep at temperatures below -10°C. Material darkens in color during storage. Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place.

Technical Rules for Hazardous Substances (TRGS) 510 Class 3  
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

Component	The United Kingdom	European Union	Ireland
Hydroquinone	STEL: 1.5 mg/m <sup>3</sup> 15 min TWA: 0.5 mg/m <sup>3</sup> 8 hr		TWA: 0.5 mg/m <sup>3</sup> 8 hr. STEL: 1.5 mg/m <sup>3</sup> 15 min

#### 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)

Workers; See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
4-Vinylpyridine 100-43-6 ( >95 )		DNEL = 0.39mg/kg bw/day		DNEL = 0.13mg/kg bw/day
Hydroquinone 123-31-9 ( 0.0125 )				DNEL = 3.33mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
4-Vinylpyridine 100-43-6 ( >95 )		DNEL = 1.05mg/m <sup>3</sup>		DNEL = 0.35mg/m <sup>3</sup>
Hydroquinone				DNEL = 2.1mg/m <sup>3</sup>



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<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> Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141 When RPE is used a face piece Fit Test should be conducted
<b>Environmental exposure controls</b>	Prevent product from entering drains. Do not allow material to contaminate ground water system.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

<b>Physical State</b>	Liquid	
<b>Appearance</b>	Dark yellow	
<b>Odor</b>	pungent	
<b>Odor Threshold</b>	No data available	
<b>Melting Point/Range</b>	< - 20 °C / < - 4 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	171 °C / 339.8 °F	@ 760 mmHg
<b>Flammability (liquid)</b>	Flammable	On basis of test data
<b>Flammability (solid,gas)</b>	Not applicable	Liquid
<b>Explosion Limits</b>	<b>Lower</b> 1.3 <b>Upper</b> 10.7	
<b>Flash Point</b>	48 °C / 118.4 °F	<b>Method</b> - No information available
<b>Autoignition Temperature</b>	460 °C / 860 °F	
<b>Decomposition Temperature</b>	> 100°C	
<b>pH</b>	No information available	
<b>Viscosity</b>	< 3 cps @ 20 °C	Measured
<b>Water Solubility</b>	29 g/L (20°C)	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Component</b>	<b>log Pow</b>	
4-Vinylpyridine	1.36	
Hydroquinone	0.59	
<b>Vapor Pressure</b>	2.5 hPa @ 20 °C	
<b>Density / Specific Gravity</b>	0.989	
<b>Bulk Density</b>	Not applicable	Liquid
<b>Vapor Density</b>	4.37 (Air = 1.0)	(Air = 1.0)
<b>Particle characteristics</b>	Not applicable (liquid)	

### 9.2. Other information

<b>Molecular Formula</b>	C7 H7 N
<b>Molecular Weight</b>	105.14
<b>Explosive Properties</b>	explosive air/vapour mixtures possible
<b>Oxidizing Properties</b>	Not oxidising
<b>Self-accelerating polymerisation temperature (SAPT)</b>	>55°C (packages up to 50kg) Inhibitor level > 100 -150 ppm

## 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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Unstable. The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is noticeably exceeded, the product may polymerize with heat evolution.

## 10.3. Possibility of hazardous reactions

**Hazardous Polymerization  
Hazardous Reactions**

Polymerization can occur.  
None under normal processing.

## 10.4. Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Excess heat.  
Incompatible products.

## 10.5. Incompatible materials

Strong oxidizing agents. Strong acids.

## 10.6. Hazardous decomposition products

Nitrogen oxides (NO<sub>x</sub>). Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrogen cyanide (hydrocyanic acid).

## 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 3  
**Dermal** Category 3  
**Inhalation** Category 3

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
4-Vinylpyridine	LD50 = 100 mg/kg ( Rat )	LD50 < 500 mg/kg (Guinea pig)	LC50 = 1000 - 2000 ppm (Rat, 4h)
Hydroquinone	LD50 = 298 mg/kg ( Rat )	LD50 = 74800 mg/kg ( Rabbit )	-

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

#### (d) respiratory or skin sensitization;

**Respiratory** No data available  
**Skin** Category 1  
May cause sensitization by skin contact

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

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

Component	EU	UK	Germany	IARC
Hydroquinone			Cat. 2	

(g) reproductive toxicity; No data available



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(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs No information available.

(j) aspiration hazard; No data available

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

**Symptoms / effects, both acute and delayed** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

## 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

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

Component	Freshwater Fish	Water Flea	Freshwater Algae
4-Vinylpyridine	LC50: = 1.04 mg/L, 96h (Oryzias latipes) LC50: = 1.57 mg/L, 48h (Oryzias latipes)	EC50: = 1.17mg/L, 48h (Daphnia magna)	EC50: = 4.55 mg/L, 72h (Psuedokirchneriella subcapitata) NOEC: = 0.86 mg/L, 72h (Psuedokirchneriella subcapitata)
Hydroquinone	LC50: 0.1 - 0.18 mg/L, 96h static (Pimephales promelas) LC50: = 0.17 mg/L, 96h (Brachydanio rerio) LC50: = 0.044 mg/L, 96h flow-through (Pimephales promelas) LC50: = 0.044 mg/L, 96h flow-through (Oncorhynchus mykiss)	EC50: = 0.29 mg/L, 48h (Daphnia magna)	EC50: = 0.335 mg/L, 72h (Pseudokirchneriella subcapitata)

Component	Microtox	M-Factor
Hydroquinone	EC50 = 0.038 mg/L 15 min EC50 = 0.0382 mg/L 30 min EC50 = 0.042 mg/L 5 min EC50 = 23.75 mg/L 60 min	10

### 12.2. Persistence and degradability

**Persistence**

Persistence is unlikely, based on information available.

**Degradation in sewage treatment plant**

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

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**12.3. Bioaccumulative potential** Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
4-Vinylpyridine	1.36	58 - 96 @ 20 ug/L 48 - 96 @ 2 ug/L
Hydroquinone	0.59	40 dimensionless

**12.4. Mobility in soil** The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air.

**12.5. Results of PBT and vPvB assessment** Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

**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. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

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

**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. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Do not let this chemical enter the environment.

## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

**14.1. UN number** UN3073  
**14.2. UN proper shipping name** VINYLPIRIDINES, STABILIZED  
**14.3. Transport hazard class(es)** 6.1  
**Subsidiary Hazard Class** 3, 8  
**14.4. Packing group** II

### ADR

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**14.1. UN number** UN3073  
**14.2. UN proper shipping name** VINYLPIRIDINES, STABILIZED  
**14.3. Transport hazard class(es)** 6.1  
**Subsidiary Hazard Class** 3, 8  
**14.4. Packing group** II

**IATA**

**14.1. UN number** UN3073  
**14.2. UN proper shipping name** VINYLPIRIDINES, STABILIZED  
**14.3. Transport hazard class(es)** 6.1  
**Subsidiary Hazard Class** 3, 8  
**14.4. Packing group** II

**14.5. Environmental hazards** Dangerous for the environment  
 Product is a marine pollutant according to the criteria set by IMDG/IMO

**14.6. Special precautions for user** Inhibitors have been added to stabilize this product. Inhibitor levels should be maintained.  
 Hazardous polymerization may occur upon depletion of inhibitor.

**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
4-Vinylpyridine	100-43-6	202-852-0	-	-	X	X	KE-35388	X	X
Hydroquinone	123-31-9	204-617-8	-	-	X	X	KE-35112	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
4-Vinylpyridine	100-43-6	X	ACTIVE	X	-	X	X	X
Hydroquinone	123-31-9	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)
4-Vinylpyridine	100-43-6	-	-	-
Hydroquinone	123-31-9	-	Use restricted. See item 75. (see link for restriction details)	-

**REACH links**

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

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## 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
4-Vinylpyridine	100-43-6	Not applicable	Not applicable
Hydroquinone	123-31-9	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 .

## National Regulations

**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
Hydroquinone	WGK3	Class I : 20 mg/m <sup>3</sup> (Massenkonzentration)

Component	France - INRS (Tables of occupational diseases)
Hydroquinone	Tableaux des maladies professionnelles (TMP) - RG 65

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
Hydroquinone 123-31-9 ( 0.0125 )	Prohibited and Restricted Substances		

## 15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

## SECTION 16: OTHER INFORMATION

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

H226 - Flammable liquid and vapor

H301 - Toxic if swallowed

H302 - Harmful if swallowed

H311 - Toxic in contact with skin

H331 - Toxic if inhaled

H314 - Causes severe skin burns and eye damage

H317 - May cause an allergic skin reaction

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H318 - Causes serious eye damage  
H341 - Suspected of causing genetic defects  
H351 - Suspected of causing cancer  
H400 - Very toxic to aquatic life  
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%

**NOEC** - No Observed Effect Concentration

**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

Predicted No Effect Concentration (PNEC)

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water

**vPvB** - very Persistent, very Bioaccumulative

**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

**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)

## 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

16-Nov-2010

## Revision Date

03-Apr-2024

## Revision Summary

New emergency telephone response service provider.

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

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**