

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 26-Sep-2009

Revision Date 25-Sep-2023

Revision Number 9

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

1.1. Product identifier

Product Description: Cat No. : Synonyms Index No CAS No EC No Molecular Formula	Hydroquinone 120910000; 120910020; 120910050; 120915000 1,4-Dihydroxybenzene; 1,4-Benzenediol 604-005-00-4 123-31-9 204-617-8 C6 H6 O2 substance or mixture and uses advised against
1.2. Relevant Identified uses of the	Substance of mixture and uses advised against
Recommended Use Uses advised against	Laboratory chemicals. No Information available
1.3. Details of the supplier of the sa	afety data sheet
Company	UK entity/business name Fisher Scientific UK Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom EU entity/business name Thermo Fisher Scientific Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium
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

Based on available data, the classification criteria are not met

Health hazards

Hydroquinone

Acute oral toxicity Serious Eye Damage/Eye Irritation Skin Sensitization Germ Cell Mutagenicity Carcinogenicity

Environmental hazards

Acute aquatic toxicity

Category 4 (H302) Category 1 (H318) Category 1 (H317) Category 2 (H341) Category 2 (H351)

Category 1 (H400)

Full text of Hazard Statements: see section 16



Signal Word

Danger

Hazard Statements

- H318 Causes serious eye damage
- H341 Suspected of causing genetic defects
- H317 May cause an allergic skin reaction
- H351 Suspected of causing cancer
- H302 Harmful if swallowed
- H400 Very toxic to aquatic life

Precautionary Statements

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P310 - Immediately call a POISON CENTER or doctor/physician

P273 - Avoid release to the environment

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component C	AS No EC N	- J	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
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Hydroquinone

Revision Date 25-Sep-2023

Hydroquinone	123-31-9	EEC No. 204-617-8	99	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
Hydroguinone	-	10	-

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice	If symptoms persist, call a physician.	
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.	
Ingestion	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.	
Inhalation	Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention.	
Self-Protection of the First Aider	Use personal protective equipment as required.	
4.2. Most important symptoms and effects, both acute and delayed		

Causes eye burns. May cause allergic skin reaction. 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

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 (CO2), 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

Fine dust dispersed in air may ignite. 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

Hydroquinone

Carbon monoxide (CO), Carbon dioxide (CO₂).

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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation.

6.2. 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. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage.

6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

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. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

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) 510Class 11Storage 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

Hydroquinone

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 ³ 15 min		TWA: 0.5 mg/m ³ 8 hr.
	TWA: 0.5 mg/m ³ 8 hr		STEL: 1.5 mg/m ³ 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)

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Hydroquinone 123-31-9 (99)				DNEL = 3.33mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Hydroquinone 123-31-9 (99)				DNEL = 2.1mg/m ³

Predicted No Effect Concentration (PNEC)

See values below.

	Component	Fresh water	Fresh water sediment		Microorganisms in sewage treatment	,
Γ	Hydroquinone	PNEC = 0.57µg/L	PNEC = 4.9µg/kg	PNEC = 1.34µg/L	PNEC = 0.71mg/L	$PNEC = 0.64 \mu g/kg$
L	123-31-9(99)		sediment dw			soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Hydroquinone 123-31-9(99)	PNEC = 0.057µg/L	PNEC = 0.49µg/kg sediment dw			

8.2. 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	Tight sealing safety g	goggles Goggles (Europe	ean standard - EN 166)	
Hand Protection	Protective gloves			
Nitrile rubber See ma	hrough time Glove thic anufacturers - mendations	kness EU standard EN 374	Glove comments (minimum requirement)	
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
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced Recommended Filter type: Particulates filter conforming to EN 143
Small scale/Laboratory use	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. Recommended half mask:- Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted
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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Solid	
Appearance Odor Odor Threshold Melting Point/Range Softening Point Boiling Point/Range Flammability (liquid) Flammability (solid,gas) Explosion Limits	Off-white Odorless No data available 170 - 174 °C / 338 - 345.2 °F No data available 285 - 287 °C / 545 - 548.6 °F Not applicable No information available No data available	@ 760 mmHg Solid
Flash Point Autoignition Temperature	165 °C / 329 °F 520 - °C / 968 - °F No data available	Method - No information available
Decomposition Temperature pH Viscosity Water Solubility Solubility in other solvents	3.75 Not applicable 70 g/l in water (20°C) No information available	70 g/l aq.sol Solid
Partition Coefficient (n-octanol/wat Component Hydroquinone Vapor Pressure Density / Specific Gravity	log Pow 0.59 1 mmHg @ 132 ℃ 1.320	
Bulk Density Vapor Density Particle characteristics	No data available Not applicable No data available	Solid
9.2. Other information		
Molecular Formula	C6 H6 O2	

Hydroquinone

Molecular Weight Evaporation Rate 110.11 Not applicable - Solid

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity	None known, based on information available
10.2. Chemical stability	Stable under normal conditions.
10.3. Possibility of hazardous react	ions
Hazardous Polymerization Hazardous Reactions	Hazardous polymerization does not occur. None under normal processing.
10.4. Conditions to avoid	Avoid dust formation. Incompatible products. Excess heat.
10.5. Incompatible materials	Strong oxidizing agents. Strong bases. Alkaline.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11: TOXICOLOGICAL INFORMATION

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

Product Information

(a) acute toxicity;

Oral Dermal Inhalation Category 4 Based on available data, the classification criteria are not met Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hydroquinone	LD50 = 298 mg/kg (Rat)	LD50 = 74800 mg/kg (Rabbit)	-

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization; Respiratory Skin	No data available Category 1
	May cause sensitization by skin contact
(e) germ cell mutagenicity;	Category 2
	Mutagenic category 2
(f) carcinogenicity;	Category 2

Hydroquinone

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; Reproductive Effects	No data available Experiments have		xicity effects on laboratory	animals.
(h) STOT-single exposure;	No data available			
(i) STOT-repeated exposure;	No data available			
Target Organs	No information av	vailable.		
(j) aspiration hazard;	Not applicable Solid			
Symptoms / effects,both acute and delayed			le rash, itching, swelling, tro dedness, chest pain, musc	
11.2. Information on other hazards				
		1. <i></i>		

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

Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
	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	EC50: = 0.335 mg/L, 72h (Pseudokirchneriella subcapitata)

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

 12.2. Persistence and degradability
 Expected to be biodegradable

 Persistence
 Soluble in water, Persistence is unlikely, based on information available.

 Degradation in sewage
 Contains substances known to be hazardous to the environment or not degradable in waster

 treatment plant
 water treatment plants.

Hydroquinone

12.3. Bioaccumulative potential

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Hydroquinone	0.59	40 dimensionless
<u>12.4. Mobility in soil</u>	The product is water soluble, and may spread environment due to its water solubility. Highly	in water systems . Will likely be mobile in the mobile in soils
<u>12.5. Results of PBT and vPvB</u> assessment	Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).	
<u>12.6. Endocrine disrupting</u> properties Endocrine Disruptor Information	This product does not contain any known or su	uspected endocrine disruptors
<u>12.7. Other adverse effects</u> Persistent Organic Pollutant Ozone Depletion Potential	This product does not contain any known or su This product does not contain any known or su	•
SECTION 13: DISPOSAL CONSIDERATIONS		
13.1. Waste treatment methods		

Waste from Residues/Unused Products	Should not be released into the environment. 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	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

IMDG/IMO

<u>14.1. UN number</u>	UN3077
14.2. UN proper shipping name	Environmentally hazardous substances, solid, n.o.s.
Technical Shipping Name	Hydroquinone
14.3. Transport hazard class(es)	9
14.4. Packing group	III

<u>ADR</u>

<u>14.1. UN number</u>	UN3077
14.2. UN proper shipping name	Environmentally hazardous substances, solid, n.o.s.
Technical Shipping Name	Hydroquinone
14.3. Transport hazard class(es)	9

Hydroquinone

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14.4. Packing group

IATA

<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> Technical Shipping Name <u>14.3. Transport hazard class(es)</u> <u>14.4. Packing group</u>	UN3077 Environmentally hazardous substances, solid, n.o.s. Hydroquinone 9 III
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	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

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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)

Hydroquinone 123-31-9 204-617-8 X X KE-35112	X	Х

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Hydroquinone	123-31-9	Х	ACTIVE	Х	-	Х	Х	Х

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 Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Hydroquinone	123-31-9	-	Use restricted. See item 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	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report
		Notification	Requirements
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 ³ (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 (99)	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

H302 - Harmful if swallowed

H317 - May cause an allergic skin reaction

H318 - Causes serious eye damage

H341 - Suspected of causing genetic defects

H351 - Suspected of causing cancer

H400 - Very toxic to aquatic life

Legend

CAS - Chemical Abstracts Service	TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemica	
Substances/EU List of Notified Chemical Substances	Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances	ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances	AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances	NZIOC - New Zealand Inventory of Chemicals

Hydroquinone

WEL - Workplace Exposure Limit	TWA - Time Weighted Average
ACGIH - American Conference of Governmental Industrial Hygienists	IARC - International Agency for Research on Cancer
DNEL - Derived No Effect Level	Predicted No Effect Concentration (PNEC)
RPE - Respiratory Protective Equipment	LD50 - Lethal Dose 50%
LC50 - Lethal Concentration 50%	EC50 - Effective Concentration 50%
NOEC - No Observed Effect Concentration	POW - Partition coefficient Octanol:Water
PBT - Persistent, Bioaccumulative, Toxic	vPvB - very Persistent, very Bioaccumulative
ADR - European Agreement Concerning the International Carriage of	ICAO/IATA - International Civil Aviation Organization/International Air
Dangerous Goods by Road	Transport Association
IMO/IMDG - International Maritime Organization/International Maritime	MARPOL - International Convention for the Prevention of Pollution from
Dangerous Goods Code	Ships
OECD - Organisation for Economic Co-operation and Development	ATE - Acute Toxicity Estimate

Acute Toxicity Estimate VOC - (Volatile Organic Compound)

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

Training Advice

Chemical incident response training.

Creation Date	26-Sep-2009
Revision Date	25-Sep-2023
Revision Summary	Not applicable.

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

Disclaimer

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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