

SAFETY DATA SHEET

OP-U



Section 1. Identification

Product name : OP-U
Cat. No. : 40700211, 40700213
Container size : 1, 4 l
Other means of identification : Not available.
Product type : Liquid.

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

Product use : Polishing agent for materialographic specimen preparation.
Area of application : Professional applications.

Supplier's details : Struers Australia
27 Mayneview Street
Milton QLD 4064, Australia

Telephone: +61 7 3512 9600

e-mail address of person responsible for this SDS : sdsquestions@struers.dk
Emergency telephone number (with hours of operation) : National Poisons Centre: 0800 764 766 (24/7)

Section 2. Hazards identification

HSNO Classification : Not classified.

This material is not classified as hazardous according to criteria in the Hazardous Substances (Hazard Classification) Notice 2020.

☒ This material is not classified as DANGEROUS GOODS according to criteria in New Zealand Standard 5433:2020 Transport of Dangerous Goods on Land.

GHS label elements

Signal word : No signal word.
Hazard statements : No known significant effects or critical hazards.
Precautionary statements
Prevention : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.

Version : 1.04

Date of issue/Date of revision : 20/03/2026



Section 2. Hazards identification

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Not available.

Ingredient name	% (w/w)	Identifiers
silicon dioxide	≥30 - ≤60	CAS: 7631-86-9
butane-1,3-diol	≥10 - ≤30	CAS: 107-88-0

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Eye contact** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Inhalation** : No specific data.
- Ingestion** : No specific data.
- Skin** : No specific data.
- Eyes** : No specific data.



Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

- Specific treatments** : No specific treatment.
- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Hazchem code : Not available.

Special precautions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Dispose of via a licensed waste disposal contractor.

Version : 1.04

Date of issue/Date of revision : 20/03/2026

Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
silicon dioxide	EH40/2005 WELs (United Kingdom (UK), 1/2020) [silica, amorphous] TWA 8 hours: 6 mg/m ³ . Form: inhalable dust. TWA 8 hours: 2.4 mg/m ³ . Form: respirable dust.

Biological exposure indices

No exposure indices known.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Version : 1.04

Date of issue/Date of revision : 20/03/2026

Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. > 8 hours (breakthrough time): Recommended: Nitrile gloves. thickness: >=0.35 mm
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: (as filter combination A2/P2)

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Liquid. [Suspension]
- Colour** : White.
- Odour** : Odour [Slight]
- Odour threshold** : Not available.
- pH** : 9.5
- Melting point/freezing point** : 0°C (32°F)
- Boiling point or initial boiling point and boiling range** : 100°C (212°F)
- Flash point** :

Ingredient name	Closed cup			Open cup		
	°C	°F	Method	°C	°F	Method
butane-1,3-diol	115	239	ISO 2719			

- Evaporation rate** : Not available.

Version : 1.04

Date of issue/Date of revision : 20/03/2026

Section 9. Physical and chemical properties and safety characteristics

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Not available.

Vapour pressure :	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	Ingredient name	mm Hg	kPa	Method	mm Hg	kPa
	Water	17.5	2.3		92.258	12.3

Relative vapour density : Not available.

Relative density : 1.3

Solubility(ies) :	Media	Result
	water	Soluble

Solubility in water : Not available.

Miscible with water : Yes.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature :	Ingredient name	°C	°F	Method
	butane-1,3-diol	410	770	EU A.15

Decomposition temperature : Not available.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): 7.5 mm²/s (7.5 cSt)
Kinematic (40°C (104°F)): Not available.

Flow time (ISO 2431) : Not available.

Particle characteristics

Median particle size : Not applicable.

Other information

Physical/chemical properties comments : No additional information.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerisation will not occur.

Conditions to avoid : No specific data.

Version : 1.04

Date of issue/Date of revision : 20/03/2026

Section 10. Stability and reactivity

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on likely routes of exposure

Inhalation : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Eye contact : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.
Ingestion : No specific data.
Skin contact : No specific data.
Eye contact : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	
silicon dioxide	Rat - Male, Female - Oral - LD50 >5000 mg/kg	OECD 401 [Acute Oral Toxicity]
	Rabbit - Dermal - LD50 >5000 mg/kg	
	Rat - Male, Female - Inhalation - LC50 Dusts and mists >58.8 mg/l [4 hours]	OECD 403 [Acute Inhalation Toxicity]
butane-1,3-diol	Rabbit - Dermal - LD50 >20 g/kg	
	Rat - Male - Oral - LD50 22800 mg/kg	

Conclusion/Summary[Product] : Not available.

Skin corrosion/irritation

Product/ingredient name	Result
-------------------------	--------

Section 11. Toxicological information

silicon dioxide	Rabbit - Skin - Negative	OECD 404 [Acute Dermal Irritation/Corrosion]
butane-1,3-diol	Irritation score: 0	
	Rabbit - Skin - Mild irritant	
	Duration of treatment/exposure: 24 hours	
	Amount/concentration applied: 500 mg	

Conclusion/Summary[Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name	Result	
silicon dioxide	Rabbit - Eyes - Negative	OECD 405 [Acute Eye Irritation/Corrosion]
	Irritation score: 0	

Conclusion/Summary[Product] : Not available.

Respiratory corrosion/irritation

Conclusion/Summary[Product] : Not available.

Respiratory or skin sensitization

Skin

Conclusion/Summary[Product] : Not available.

Respiratory

Conclusion/Summary[Product] : Not available.

Potential chronic health effects

General	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.
Skin contact	: No known significant effects or critical hazards.
Eye contact	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Chronic toxicity

Product/ingredient name	Result
-------------------------	--------



Section 11. Toxicological information

 silicon dioxide	Chronic - Rat - Oral - NOAEL	OECD 408 [Repeated Dose 90-Day Oral Toxicity Study in Rodents] OECD 413 [Subchronic Inhalation Toxicity: 90-day Study]
	9000 mg/kg [90 days] Chronic - Rat - Inhalation - NOAEL 31 mg/m ³ [90 days]	

Conclusion/Summary[Product] : Not available.

Carcinogenicity

Conclusion/Summary[Product] : Not available.

Germ cell mutagenicity

Product/ingredient name	Result	
 silicon dioxide	In vitro - Bacteria <u>Result:</u> Negative	OECD 471 [Bacterial Reverse Mutation Test]
butane-1,3-diol	In vivo - Mammalian-Animal <u>Result:</u> Negative	

Conclusion/Summary[Product] : Not available.

Reproductive toxicity

Product/ingredient name	Result	
 silicon dioxide	Rat - Oral 1350 mg/kg - NOAEL <u>Maternal toxicity:</u> Negative <u>Developmental:</u> Negative	OECD 414 [Prenatal Developmental Toxicity Study]

Conclusion/Summary[Product] : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Product/ingredient name	Result
butane-1,3-diol	ASPIRATION HAZARD - Category 1

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
butane-1,3-diol	22800	N/A	N/A	N/A	N/A

Section 12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic and terrestrial toxicity

Product/ingredient name

silicon dioxide

Result

Acute - EC50

Algae - *Scenedesmus subspicatus*
>10000 mg/l [72 hours]

OECD 201 [Alga, Growth Inhibition Test]

Acute - EC50 - Fresh water

Daphnia - Water flea - *Daphnia magna*
- Neonate

Effect: Intoxication
ISO

Age: 2 to 26 hours

2.2 g/l [48 hours]

Chronic - NOEC - Fresh water

Daphnia - Water flea - *Daphnia magna*
- Neonate

Effect: Reproduction
ISO

Age: 2 to 26 hours

12.5 mg/l [21 days]

butane-1,3-diol

Acute - LC50 - Fresh water

Fish - *Oryzias latipes*
>100 mg/l [96 hours]

OECD 203 [Fish, Acute Toxicity Test]

Acute - EC50 - Fresh water

Daphnia - *Daphnia magna*
>1000 mg/l [48 hours]

OECD 202 [Daphnia sp. Acute Immobilization Test and Reproduction Test]

Acute - EC50 - Fresh water

Algae
>1070 mg/l [72 hours]

OECD 201 [Alga, Growth Inhibition Test]

Conclusion/Summary[Product] : Not available.

Persistence and degradability

Product/ingredient name

butane-1,3-diol

Result

Aerobic

81% [29 days] - Readily

OECD 301B [Ready Biodegradability - CO2 Evolution Test]

Conclusion/Summary[Product] : Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
butane-1,3-diol	-0.92	3.2	Low

Version : 1.04

Date of issue/Date of revision : 20/03/2026

Section 12. Ecological information

Mobility in soil

Soil/water partition coefficient : Not available.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	New Zealand	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.



Section 15. Regulatory information

HSNO Approval Number : Not available.
HSNO Group Standard : Not available.
HSNO Classification : Not classified.
New Zealand Inventory of Chemicals (NZIoC) : All components are listed or exempted.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Other information

History

Date of issue/Date of revision : 20/03/2026
Date of previous issue : 13/01/2025
Version : 1.04

Sphera Solutions

Key to abbreviations : ADG = Australian Dangerous Goods
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
 ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 IMO = International Maritime Organization
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
 SGG = Segregation Group
 UN = United Nations



Section 16. Other information

References : Environmental Protection Authority - Inventory of Chemicals (NZIoC)
Hazardous Substances Regulations 2001 (Classification, Identification, Minimum Degrees of Hazard)
Hazardous Substances and New Organisms Act (HSNO) 1996 – Hazardous Substances List
Health and Safety in Employment Act 1992 - Workplace Exposure Standards and Biological Exposure Indices
Code of Practice for the Preparation of Safety Data Sheets (SDS)
Transport of Dangerous Goods on Land (NZS 5433:2020)
User Guide to the Thresholds and Classifications under the Hazardous Substances and New Organisms Act 1996 (GHS)
GHS - Globally Harmonised System of Classification and Labelling of Chemicals
International transport regulations

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

