

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

### 1.1. Product identifier

**Product Description:** Graphite conductive adhesive, alcohol based  
**Cat No. :** 41213

### 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

**Poison Centre - Emergency information services**  
**Ireland** : National Poisons Information Centre (NPIC) -  
**01 809 2166** (8am-10pm, 7 days a week)  
**Malta** : +356 2395 2000  
**Cyprus** : +357 2240 5611

## 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

Flammable liquids Category 2 (H225)

##### Health hazards

Serious Eye Damage/Eye Irritation Category 1 (H318)

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Specific target organ toxicity - (single exposure)

Category 3 (H335) (H336)

## 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

- H225 - Highly flammable liquid and vapor
- H318 - Causes serious eye damage
- H335 - May cause respiratory irritation
- H336 - May cause drowsiness or dizziness

## Precautionary Statements

- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- P280 - Wear eye protection/ face protection
- P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
- 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

This product does not contain any known or suspected endocrine disruptors

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2. Mixtures

Component	CAS No	EC No	Weight %	GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Isopropyl alcohol	67-63-0	200-661-7	50	Flam. Liq. 2 (H225) Eye Irrit. 2 (H319) STOT SE 3 (H336)
Propylene glycol monomethyl ether	107-98-2	EEC No. 203-539-1	20	Flam. Liq. 3 (H226) STOT SE 3 (H336)
Graphite	7782-42-5	EEC No. 231-955-3	20	-
n-Butyl alcohol	71-36-3	EEC No. 200-751-6	5	Flam. Liq. 3 (H226) Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318)

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				STOT SE 3 (H335) STOT SE 3 (H336)
Proprietary thickener	N/A		5	-

Full text of Hazard Statements: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

<b>General Advice</b>	If symptoms persist, call a physician.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
<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

Difficulty in breathing. Causes eye burns. Causes severe eye damage. Inhalation of high vapor concentrations may cause symptoms like 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**

Carbon dioxide (CO<sub>2</sub>). Powder. Water spray. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. 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

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**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

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## 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

Ensure adequate ventilation. Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges.

### 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

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. 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

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. 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 container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame.

**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

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## Exposure limits

List source(s): **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 **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
Isopropyl alcohol	STEL: 500 ppm 15 min STEL: 1250 mg/m <sup>3</sup> 15 min TWA: 400 ppm 8 hr TWA: 999 mg/m <sup>3</sup> 8 hr		TWA: 200 ppm 8 hr. STEL: 400 ppm 15 min Skin
Propylene glycol monomethyl ether	STEL: 150 ppm 15 min STEL: 560 mg/m <sup>3</sup> 15 min TWA: 100 ppm 8 hr TWA: 375 mg/m <sup>3</sup> 8 hr Skin	TWA: 100 ppm (8h) TWA: 375 mg/m <sup>3</sup> (8h) STEL: 150 ppm (15min) STEL: 568 mg/m <sup>3</sup> (15min) Skin	TWA: 100 ppm 8 hr. TWA: 375 mg/m <sup>3</sup> 8 hr. STEL: 150 ppm 15 min STEL: 568 mg/m <sup>3</sup> 15 min
Graphite	STEL: 30 mg/m <sup>3</sup> 15 min STEL: 12 mg/m <sup>3</sup> 15 min TWA: 10 mg/m <sup>3</sup> 8 hr TWA: 4 mg/m <sup>3</sup> 8 hr		TWA: 2 mg/m <sup>3</sup> 8 hr. all forms except fibres; respirable fraction STEL: 6 mg/m <sup>3</sup> 15 min
n-Butyl alcohol	50ppm STEL; 154mg/m <sup>3</sup> STEL		TWA: 20 ppm 8 hr. STEL: 60 ppm 15 min Skin

## Biological limit values

List source(s):

## 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)
Isopropyl alcohol 67-63-0 ( 50 )				DNEL = 888mg/kg bw/day
Propylene glycol monomethyl ether 107-98-2 ( 20 )				DNEL = 183mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Isopropyl alcohol 67-63-0 ( 50 )				DNEL = 500mg/m <sup>3</sup>
Propylene glycol monomethyl ether 107-98-2 ( 20 )	DNEL = 553.5mg/m <sup>3</sup>	DNEL = 553.5mg/m <sup>3</sup>		DNEL = 369mg/m <sup>3</sup>
Graphite 7782-42-5 ( 20 )			DNEL = 1.2mg/m <sup>3</sup>	DNEL = 1.2mg/m <sup>3</sup>
n-Butyl alcohol 71-36-3 ( 5 )			DNEL = 310mg/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)
Isopropyl alcohol 67-63-0 ( 50 )	PNEC = 140.9mg/L	PNEC = 552mg/kg sediment dw	PNEC = 140.9mg/L	PNEC = 2251mg/L	PNEC = 28mg/kg soil dw
Propylene glycol monomethyl ether	PNEC = 10mg/L	PNEC = 52.3mg/kg sediment dw	PNEC = 100mg/L	PNEC = 100mg/L	PNEC = 4.59mg/kg soil dw

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107-98-2 ( 20 )					
n-Butyl alcohol 71-36-3 ( 5 )	PNEC = 0.082mg/L	PNEC = 0.324mg/kg sediment dw	PNEC = 2.25mg/L	PNEC = 2476mg/L	PNEC = 0.0166mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Isopropyl alcohol 67-63-0 ( 50 )	PNEC = 140.9mg/L	PNEC = 552mg/kg sediment dw		PNEC = 160mg/kg food	
Propylene glycol monomethyl ether 107-98-2 ( 20 )	PNEC = 1mg/L	PNEC = 5.2mg/kg sediment dw			
n-Butyl alcohol 71-36-3 ( 5 )	PNEC = 0.0082mg/L	PNEC = 0.0324mg/kg sediment dw			

## 8.2. Exposure controls

### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. 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
Nitrile rubber	See manufacturers recommendations	-	EN 374	(minimum requirement)
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 compatibility, 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:** Organic gases and vapours filter Type A Brown conforming to EN14387

#### 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:-** Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

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**Environmental exposure controls** No information available.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

<b>Physical State</b>	Liquid Viscous liquid	
<b>Appearance</b>	Black	
<b>Odor</b>	No information available	
<b>Odor Threshold</b>	No data available	
<b>Melting Point/Range</b>	No data available	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	82 °C / 179.6 °F	
<b>Flammability (liquid)</b>	Highly flammable	On basis of test data
<b>Flammability (solid,gas)</b>	Not applicable	Liquid
<b>Explosion Limits</b>	No data available	
<b>Flash Point</b>	11 °C / 51.8 °F	<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>	No data available	
<b>Water Solubility</b>	Miscible	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Component</b>	<b>log Pow</b>	
Isopropyl alcohol	0.05	
Propylene glycol monomethyl ether	<1	
n-Butyl alcohol	1	
<b>Vapor Pressure</b>	23 hPa @ 20 °C	
<b>Density / Specific Gravity</b>	0.9 g/cm3	@ 20 °C
<b>Bulk Density</b>	Not applicable	Liquid
<b>Vapor Density</b>	No data available	(Air = 1.0)
<b>Particle characteristics</b>	Not applicable (liquid)	

### 9.2. Other information

**Explosive Properties** Vapors may form explosive mixtures with air

## 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 reactions

**Hazardous Polymerization** No information available.  
**Hazardous Reactions** None under normal processing.

**10.4. Conditions to avoid** Keep away from open flames, hot surfaces and sources of ignition.

### 10.5. Incompatible materials

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Oxidizing agent.

## 10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

## SECTION 11: TOXICOLOGICAL INFORMATION

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

#### Product Information

##### (a) acute toxicity;

Oral

Based on available data, the classification criteria are not met

Dermal

Based on available data, the classification criteria are not met

Inhalation

Based on available data, the classification criteria are not met

#### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Isopropyl alcohol	5045 mg/kg ( Rat ) 3600 mg/kg ( Mouse )	12800 mg/kg ( Rat )	72.6 mg/L ( Rat ) 4 h
Propylene glycol monomethyl ether	LD50 = 5000 mg/kg ( Rat )	LD50 = 13 g/kg ( Rabbit )	LC50 > 7559 ppm ( Rat ) 6 h
Graphite	-	-	LC50 > 2000 mg/m <sup>3</sup> ( Rat ) 4 h
n-Butyl alcohol	LD50 = 700 mg/kg ( Rat )	LD50 = 3402 mg/kg ( Rabbit )	LC50 > 8000 ppm ( Rat ) 4 h

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; Category 1

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

Respiratory

No data available

Skin

No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; Category 3

Results / Target organs

Respiratory system, Central nervous system (CNS).

(i) STOT-repeated exposure; No data available

Target Organs

No information available.

(j) aspiration hazard; No data available



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**Symptoms / effects, both acute and delayed** Inhalation of high vapor concentrations may cause symptoms like 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

Component	Freshwater Fish	Water Flea	Freshwater Algae
Isopropyl alcohol	LC50: = 9640 mg/L, 96h flow-through (Pimephales promelas) LC50: > 1400000 µg/L, 96h (Lepomis macrochirus) LC50: = 11130 mg/L, 96h static (Pimephales promelas) LC50: = 10000000 µg/L, 96h (Daphnia)	13299 mg/L EC50 = 48 h 9714 mg/L EC50 = 24 h	EC50: > 1000 mg/L, 72h (Desmodesmus subspicatus) EC50: > 1000 mg/L, 96h (Desmodesmus subspicatus)
Propylene glycol monomethyl ether	LC50: = 20.8 g/L, 96h static (Pimephales promelas)	EC50: = 23300 mg/L, 48h (Daphnia magna)	
Graphite	LC50: > 100 mg/L, 96h semi-static (Danio rerio)		
n-Butyl alcohol	LC50: 1376 mg/L, 96h (Pimephales promelas) OECD Guideline 203 : 100000 - 500000 µg/L, 96h static (Lepomis macrochirus) LC50: = 1740 mg/L, 96h flow-through (Pimephales promelas) LC50: = 1910000 µg/L, 96h static (Pimephales promelas) LC50: 1730 - 1910 mg/L, 96h static (Pimephales promelas)	EC50: 1328 mg/L, 48h (Daphnia magna) OECD Guideline 202 EC50: 1897 - 2072 mg/L, 48h Static (Daphnia magna) EC50: = 1983 mg/L, 48h (Daphnia magna)	EC50: 225 mg/L, 96h (Pseudokirchneriella subcapitata) OECD Guideline 201 EC50: > 500 mg/L, 72h (Desmodesmus subspicatus) EC50: > 500 mg/L, 96h (Desmodesmus subspicatus)

Component	Microtox	M-Factor
Isopropyl alcohol	= 35390 mg/L EC50 Photobacterium phosphoreum 5 min	
n-Butyl alcohol	EC50 = 2041.4 mg/L 5 min EC50 = 2186 mg/L 30 min EC50 = 3980 mg/L 24 h EC50 = 4400 mg/L 17 h	

### 12.2. Persistence and degradability

#### Persistence

Persistence is unlikely, based on information available.

Component	Degradability
n-Butyl alcohol 71-36-3 ( 5 )	70 %

### 12.3. Bioaccumulative potential

Bioaccumulation is unlikely

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Component	log Pow	Bioconcentration factor (BCF)
Isopropyl alcohol	0.05	No data available
Propylene glycol monomethyl ether	<1	<2 dimensionless
n-Butyl alcohol	1	0.64 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

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 Ozone Depletion Potential

This product does not contain any known or suspected substance.

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 Catalogue, 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 flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains.

## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

<u>14.1. UN number</u>	UN1133
<u>14.2. UN proper shipping name</u>	ADHESIVES
<u>14.3. Transport hazard class(es)</u>	3
<u>14.4. Packing group</u>	II

### ADR

<u>14.1. UN number</u>	UN1133
<u>14.2. UN proper shipping name</u>	ADHESIVES
<u>14.3. Transport hazard class(es)</u>	3
<u>14.4. Packing group</u>	II

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## IATA

- 14.1. UN number** UN1133  
**14.2. UN proper shipping name** ADHESIVES  
**14.3. Transport hazard class(es)** 3  
**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
Isopropyl alcohol	67-63-0	200-661-7	-	-	X	X	KE-29363	X	X
Propylene glycol monomethyl ether	107-98-2	203-539-1	-	-	X	X	KE-23379	X	X
Graphite	7782-42-5	231-955-3	-	-	X	X	KE-18101	-	-
n-Butyl alcohol	71-36-3	200-751-6	-	-	X	X	KE-03867	X	X
Proprietary thickener	N/A	-	-	-	-	-	-	-	-

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Isopropyl alcohol	67-63-0	X	ACTIVE	X	-	X	X	X
Propylene glycol monomethyl ether	107-98-2	X	ACTIVE	X	-	X	X	X
Graphite	7782-42-5	X	ACTIVE	X	-	X	X	X
n-Butyl alcohol	71-36-3	X	ACTIVE	X	-	X	X	X
Proprietary thickener	N/A	-	-	-	-	-	-	-

**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)
Isopropyl alcohol	67-63-0	-	Use restricted. See entry 75. (see link for restriction details)	-
Propylene glycol monomethyl ether	107-98-2	-	-	-
Graphite	7782-42-5	-	-	-
n-Butyl alcohol	71-36-3	-	Use restricted. See entry 75. (see link for restriction details)	-

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Proprietary thickener	N/A	-	-
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**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
Isopropyl alcohol	67-63-0	Not applicable	Not applicable
Propylene glycol monomethyl ether	107-98-2	Not applicable	Not applicable
Graphite	7782-42-5	Not applicable	Not applicable
n-Butyl alcohol	71-36-3	Not applicable	Not applicable
Proprietary thickener	N/A	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

**National Regulations**

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

**WGK Classification**

Water endangering class = 1 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Isopropyl alcohol	WGK1	
Propylene glycol monomethyl ether	WGK1	
Graphite	nwg	
n-Butyl alcohol	WGK1	

Component	France - INRS (Tables of occupational diseases)
Isopropyl alcohol	Tableaux des maladies professionnelles (TMP) - RG 84
Propylene glycol monomethyl ether	Tableaux des maladies professionnelles (TMP) - RG 84
Graphite	Tableaux des maladies professionnelles (TMP) - RG 16 Tableaux des maladies professionnelles (TMP) - RG 25
n-Butyl alcohol	Tableaux des maladies professionnelles (TMP) - RG 84

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
Isopropyl alcohol		Group I	

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67-63-0 ( 50 )			
Propylene glycol monomethyl ether 107-98-2 ( 20 )		Group I	
n-Butyl alcohol 71-36-3 ( 5 )		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

H318 - Causes serious eye damage  
H335 - May cause respiratory irritation  
H336 - May cause drowsiness or dizziness  
H225 - Highly flammable liquid and vapor  
H226 - Flammable liquid and vapor  
H302 - Harmful if swallowed  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation

### 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)

**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.

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Prepared By	Health, Safety and Environmental Department
Revision Date	30-Nov-2024
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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**End of Safety Data Sheet**