

## **Apollo Scientific**

Part Number: OR23019 Version No: 2.2 Safety Data Sheet

Chemwatch Hazard Alert Code: 2

Issue Date: 06/07/2023 Print Date: 06/07/2023 S.GHS.GB-NIR.EN

### SECTION 1 Identification of the substance / mixture and of the company / undertaking

#### **Product Identifier**

Product name	1,3-Benzodioxole-4-carboxaldehyde			
Chemical Name	2,3-(methylenedioxy)benzaldehyde			
Synonyms	Not Available			
Chemical formula	C8-H6-O3			
Other means of identification	Not Available			
CAS number	7797-83-3*			

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

Relevant identified uses

Not Available

## Details of the manufacturer or supplier of the safety data sheet

Registered company name	Apollo Scientific	Apollo Scientific Itd	
Address	Whitefield Road, Bredbury SK62QR United Kingdom	Whitefield Road, Bredbury Cheshire SK6 2QR United Kingdom (NI)	
Telephone	01614060505	+44(0) 161 406 0505 Not Available	
Fax	0161 406 0506		
Website	http://www.apolloscientific.co.uk/	apolloscientific.co.uk	
Email	sales@apolloscientific.co.uk	sales@apolloscientific.co.uk	

## **Emergency telephone number**

Association / Organisation	Not Available
Emergency telephone numbers	Not Available
Other emergency telephone numbers	Not Available

## **SECTION 2 Hazards identification**

## Classification of the substance or mixture

**Classification according to** regulation (EC) No 1272/2008 [CLP] and amendments [1]

H335 - Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, H315 - Skin Corrosion/Irritation Category 2, H319 - Serious Eye Damage/Eye Irritation Category 2

Legend: 1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

### Label elements

Hazard pictogram(s)		
Signal word	Warning	

### Hazard statement(s)

H335	May cause respiratory irritation.		
H315	Causes skin irritation.		
H319	Causes serious eye irritation.		

#### Precautionary statement(s) Prevention

P271	Use only outdoors or in a well-ventilated area.		
P261 Avoid breathing dust/fumes.			
P280 Wear protective gloves, protective clothing, eye protection and face protection.			
P264 Wash all exposed external body areas thoroughly after handling.			

#### Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.			
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.			
P337+P313	If eye irritation persists: Get medical advice/attention.			
P302+P352	IF ON SKIN: Wash with plenty of water.			
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.			
P332+P313				
P362+P364				

#### Precautionary statement(s) Storage

P405         Store locked up.			
P403+P233 Store in a well-ventilated place. Keep container tightly closed.			

### Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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#### **SECTION 3 Composition / information on ingredients**

#### Substances

CAS No		%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor
Legend:	1. Classified by Che	emwatch; 2. C	lassificatio	n drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&	L; * EU IOELVs

available; [e] Substance identified as having endocrine disrupting properties

## Mixtures

See section above for composition of Substances

### **SECTION 4 First aid measures**

#### Description of first aid measures

If this product comes in contact with the eyes:

Eye Contact

Wash out immediately with fresh running water.

+ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally

	<ul> <li>lifting the upper and lower lids.</li> <li>Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
Skin Contact	If skin or hair contact occurs: <ul> <li>Flush skin and hair with running water (and soap if available).</li> <li>Seek medical attention in event of irritation.</li> </ul>
Inhalation	<ul> <li>If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>Other measures are usually unnecessary.</li> </ul>
Ingestion	<ul> <li>Immediately give a glass of water.</li> <li>First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

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

Treat symptomatically.

### **SECTION 5 Firefighting measures**

#### Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

### Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.
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#### Advice for firefighters

Fire Fighting	<ul> <li>Alert Fire Brigade and tell them location and nature of hazard.</li> <li>Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>Prevent, by any means available, spillage from entering drains or water courses.</li> <li>Use fire fighting procedures suitable for surrounding area.</li> <li>DO NOT approach containers suspected to be hot.</li> <li>Cool fire exposed containers with water spray from a protected location.</li> <li>If safe to do so, remove containers from path of fire.</li> <li>Equipment should be thoroughly decontaminated after use.</li> </ul>
Fire/Explosion Hazard	<ul> <li>Non combustible.</li> <li>Not considered a significant fire risk, however containers may burn.</li> <li>May emit corrosive fumes.</li> </ul>

## **SECTION 6 Accidental release measures**

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

See section 8

#### **Environmental precautions**

See section 12

### Methods and material for containment and cleaning up

Minor Spills	<ul> <li>Clean up all spills immediately.</li> <li>Avoid breathing dust and contact with skin and eyes.</li> <li>Wear protective clothing, gloves, safety glasses and dust respirator.</li> <li>Use dry clean up procedures and avoid generating dust.</li> <li>Sweep up, shovel up or</li> <li>Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).</li> <li>Place spilled material in clean, dry, sealable, labelled container.</li> </ul>
Major Spills	<ul> <li>Moderate hazard.</li> <li>CAUTION: Advise personnel in area.</li> <li>Alert Emergency Services and tell them location and nature of hazard.</li> <li>Control personal contact by wearing protective clothing.</li> </ul>

Prevent, by any means available, spillage from entering drains or water courses.
Recover product wherever possible.
• IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or othe
containers for disposal. IF WET: Vacuum/shovel up and place in labelled containers for disposal.
ALWAYS: Wash area down with large amounts of water and prevent runoff into drains.
If contamination of drains or waterways occurs, advise Emergency Services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## **SECTION 7 Handling and storage**

## Precautions for safe handling

Safe handling	<ul> <li>Avoid all personal contact, including inhalation.</li> <li>Wear protective clothing when risk of exposure occurs.</li> <li>Use in a well-ventilated area.</li> <li>Prevent concentration in hollows and sumps.</li> <li>DO NOT enter confined spaces until atmosphere has been checked.</li> <li>DO NOT allow material to contact humans, exposed food or food utensils.</li> <li>Avoid contact with incompatible materials.</li> <li>When handling, DO NOT eat, drink or smoke.</li> <li>Keep containers securely sealed when not in use.</li> <li>Avoid physical damage to containers.</li> <li>Always wash hands with soap and water after handling.</li> <li>Work clothes should be laundered separately. Launder contaminated clothing before re-use.</li> <li>Use good occupational work practice.</li> <li>Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul>
Other information	<ul> <li>Store in original containers.</li> <li>Keep containers securely sealed.</li> <li>Store in a cool, dry area protected from environmental extremes.</li> <li>Store away from incompatible materials and foodstuff containers.</li> <li>Protect containers against physical damage and check regularly for leaks.</li> <li>Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>For major quantities:</li> <li>Consider storage in bunded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams).</li> <li>Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.</li> </ul>

## Conditions for safe storage, including any incompatibilities

Suitable container	<ul> <li>Lined metal can, lined metal pail/ can.</li> <li>Plastic pail.</li> <li>Polyliner drum.</li> <li>Packing as recommended by manufacturer.</li> <li>Check all containers are clearly labelled and free from leaks.</li> </ul>
Storage incompatibility	Avoid contamination of water, foodstuffs, feed or seed. None known Air Sensitive Store under argon

## **SECTION 8 Exposure controls / personal protection**

### Control parameters

### Occupational Exposure Limits (OEL)

#### INGREDIENT DATA

#### Not Available

### **Emergency Limits**

Ingredient	TEEL-1	TEEL-2	TEEL-3
1,3-Benzodioxole- 4-carboxaldehyde	Not Available	Not Available	Not Available

### 1,3-Benzodioxole-4-carboxaldehyde

Ingredient	Original IDLH	Revised IDLH
1,3-Benzodioxole- 4-carboxaldehyde	Not Available	Not Available
Exposure controls		

xposure controls			
Appropriate engineering controls	Engineering controls are used to remove a hazard or place engineering controls can be highly effective in protecting w provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job act Enclosure and/or isolation of emission source which keeps that strategically "adds" and "removes" air in the work envi designed properly. The design of a ventilation system must Employers may need to use multiple types of controls to pr Local exhaust ventilation is required where solids are h large, a certain proportion will be powdered by mutual f If in spite of local exhaust an adverse concentration of i considered. Such protection might consist of: (a): particle dust respirators, if necessary, combined with a (b): filter respirators with absorption cartridge or canister of (c): fresh-air hoods or masks. Air contaminants generated in the workplace possess vary velocities" of fresh circulating air required to effectively rem Type of Contaminant: direct spray, spray painting in shallow booths, drum filling, discharge (active generation into zone of rapid air motion). Within each range the appropriate value depends on: Lower end of the range 1: Room air currents minimal or favourable to capture 2: Contaminants of low toxicity or of nuisance value only. 3: Intermittent, low production. 4: Large hood or large air mass in motion Simple theory shows that air velocity falls rapidly with distat generally decreases with the square of distance from the e extraction point should be adjusted, accordingly, after refer extraction point should be adjusted, accordingly after refer extraction point should be adjusted accordingly after refer extraction point should be adju	vorkers and will typically be independivent of the reduce to a selected hazard "physically" awronment. Ventilation can remove of the the particular process and revent employee overexposure. In andled as powders or crystals; ever friction. The substance in air could occur, reference in absorption cartridge; for the right type; for grescape" velocities which, in two the contaminant. In the substance in air could occur, reference to distance of the range 1: Disturbing room air currents 2: Contaminants of high toxicity 3: High production, heavy use 4: Small hood-local control only succe away from the opening of a sinextraction point (in simple cases). The rence to distance from the contaminant of the substance of the range from the contaminant of high toxicity from the opening of a sinextraction point (in simple cases). The rence to distance from the contaminant of the co	Indent of worker interactions to         the risk.         ray from the worker and ventilation or dilute an air contaminant if chemical or contaminant in use.         en when particulates are relatively         espiratory protection should be         urn, determine the "capture         Air Speed:         gas       1-2.5 m/s (200-500 f/min.)         aitial       2.5-10 m/s (500-2000 f/min.)         mple extraction pipe. Velocity         Therefore the air speed at the nating source. The air velocity at the of crusher dusts generated 2 metre efficits within the extraction
Individual protection measures, such as personal protective equipment			
Eye and face protection	<ul> <li>Safety glasses with side shields.</li> <li>Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]</li> <li>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].</li> </ul>		
Skin protection	See Hand protection below		
	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from		
Hands/feet protection	manufacturer to manufacturer. Where the chemical is a pre	-	e resistance of the glove material

can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be

	observed when making a final choice. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands
	should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
	Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:
	· frequency and duration of contact,
	chemical resistance of glove material,
	· glove thickness and
	· dexterity
	Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).
	<ul> <li>When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> </ul>
	When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes
	according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
	· Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for
	long-term use.
	· Contaminated gloves should be replaced.
	As defined in ASTM F-739-96 in any application, gloves are rated as:
	Excellent when breakthrough time > 480 min
	Good when breakthrough time > 20 min
	Fair when breakthrough time < 20 min
	Poor when glove material degrades     Ear appared applications, gloves with a thickness tunically greater than 0.25 mm, are recommanded
	For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the
	permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection
	should also be based on consideration of the task requirements and knowledge of breakthrough times.
	Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the
	manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.
	Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:
	· Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these
	gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
	• Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there
	is abrasion or puncture potential
	Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a
	non-perfumed moisturiser is recommended. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids,
	where abrasive particles are not present.
	<ul> <li>polychloroprene.</li> </ul>
	▶ nitrile rubber.
	▶ butyl rubber.
	fluorocaoutchouc.
	polyvinyl chloride.
	Gloves should be examined for wear and/ or degradation constantly.
Body protection	See Other protection below
	► Overalls.
	► P.V.C apron.
Other protection	► Barrier cream.
	<ul> <li>Skin cleansing cream.</li> </ul>
	▶ Eye wash unit.

#### **Respiratory protection**

Type -P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*		PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

\* - Negative pressure demand \*\* - Continuous flow

A(AII classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

· Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.

• The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to

personal protective equipment (powered, positive flow, full face apparatus may be an option).

Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.

Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.

• Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

· Use approved positive flow mask if significant quantities of dust becomes airborne.

· Try to avoid creating dust conditions.

#### **SECTION 9** Physical and chemical properties

#### Information on basic physical and chemical properties

Appearance	Not Available		
Physical state	Solid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	34-36	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	80/0.3mm	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Not Available	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

#### **SECTION 10 Stability and reactivity**

Reactivity	See section 7
Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

### **SECTION 11 Toxicological information**

#### Information on toxicological effects

Inhaled

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control

	measures be used in an occupational setting.		
Ingestion	The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.		
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.		
Eye	This material can cause eye irritation and damage in some persons.		
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.		
1,3-Benzodioxole-	ΤΟΧΙΟΙΤΥ	IRRITATION	
4-carboxaldehyde	Not Available	Not Available	
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances		

Acute Toxicity	×	Carcinogenicity	×
Skin Irritation/Corrosion	×	Reproductivity	×
Serious Eye Damage/Irritation	*	STOT - Single Exposure	•
Respiratory or Skin sensitisation	×	STOT - Repeated Exposure	×
Mutagenicity	×	Aspiration Hazard	×
	Le	<b>gend:</b> X – Data either not ava ✓ – Data available to n	ailable or does not fill the criteria for classification nake classification

## **SECTION 12 Ecological information**

## Toxicity

4.2 Denne diavale	Endpoint	Test Duration (hr)	Species	Value	Source
1,3-Benzodioxole- 4-carboxaldehyde	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air	
	No Data available for all ingredients	No Data available for all ingredients	

### **Bioaccumulative potential**

Ingredient	Bioaccumulation	
	No Data available for all ingredients	

## Mobility in soil

Ingredient	Mobility	
	No Data available for all ingredients	

### **SECTION 13 Disposal considerations**

	Recycle wherever possible or consult manufacturer for recycling options.
Product / Packaging	Consult State Land Waste Management Authority for disposal.
disposal	Bury residue in an authorised landfill.
	Recycle containers if possible, or dispose of in an authorised landfill.
SECTION 14 Transport in	formation
Labels Required	
Marine Pollutant	NO
Sea transport (IMDG-Cod	/ DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS e / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS ort (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Transport in bulk accordi Not Applicable	ng to Annex II of MARPOL and the IBC code
Transport in bulk in acco	rdance with MARPOL Annex V and the IMSBC Code
Product name	Group
Transport in bulk in acco	rdance with the IGC Code
Product name	Ship Type
i iouuci name	ouh ishe

## **SECTION 15 Regulatory information**

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

## **National Inventory Status**

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Not Available
Canada - DSL	Not Available
Canada - NDSL	Not Available
China - IECSC	Not Available
Europe - EINEC / ELINCS / NLP	Not Available
Japan - ENCS	Not Available
Korea - KECI	Not Available
New Zealand - NZIoC	Not Available
Philippines - PICCS	Not Available
USA - TSCA	Not Available
Taiwan - TCSI	Not Available
Mexico - INSQ	Not Available
Vietnam - NCI	Not Available
Russia - FBEPH	Not Available
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

#### **SECTION 16 Other information**

Revision Date	06/07/2023
Initial Date	07/07/2023

#### **SDS Version Summary**

Version	Date of Update	Sections Updated
1.2	06/07/2023	Toxicological information - Acute Health (eye), CAS Number, Hazards identification - Classification, Disposal considerations - Disposal, Exposure controls / personal protection - Engineering Control, Exposure controls / personal protection - Exposure Standard, Firefighting measures - Fire Fighter (extinguishing media), Firefighting measures - Fire Fighter (fire fighting), First Aid measures - First Aid (eye), Handling and storage - Handling Procedure, Composition / information on ingredients - Ingredients, Korean MSDS Number, Exposure controls / personal protection - Personal Protection (other), Exposure controls / personal protection - Personal Protection (other), Accidental release measures - Spills (minor), Handling and storage - Storage (storage incompatibility), Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Sup

#### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

#### **Definitions and abbreviations**

PC - TWA: Permissible Concentration-Time Weighted Average

PC - STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit.

IDLH: Immediately Dangerous to Life or Health Concentrations

ES: Exposure Standard

OSF: Odour Safety Factor

NOAEL :No Observed Adverse Effect Level

LOAEL: Lowest Observed Adverse Effect Level

TLV: Threshold Limit Value

LOD: Limit Of Detection

OTV: Odour Threshold Value

BCF: BioConcentration Factors

BEI: Biological Exposure Index AIIC: Australian Inventory of Industrial Chemicals

DSL: Domestic Substances List

NDSL: Non-Domestic Substances List IECSC: Inventory of Existing Chemical Substance in China

EINECS: European INventory of Existing Commercial chemical Substances

ELINCS: European List of Notified Chemical Substances

NLP: No-Longer Polymers

ENCS: Existing and New Chemical Substances Inventory

KECI: Korea Existing Chemicals Inventory

NZIoC: New Zealand Inventory of Chemicals

PICCS: Philippine Inventory of Chemicals and Chemical Substances

TSCA: Toxic Substances Control Act

TCSI: Taiwan Chemical Substance Inventory

INSQ: Inventario Nacional de Sustancias Químicas

NCI: National Chemical Inventory

FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments

Classification Procedure

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, H335	Expert judgement
Skin Corrosion/Irritation Category 2, H315	Expert judgement
Serious Eye Damage/Eye Irritation Category 2, H319	Expert judgement

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