

Safety data sheet according to UK REACH

Page 1/12

Printing date 06.03.2025

Version number 2.01 (replaces version 2.00)

Revision: 06.03.2025

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

· 1.1 Product identifier

· Trade name: 4228A

- Other Means of Identification: Red Insulating Varnish
- Related Part Number: 4228A-Liquid, 4228A-55ML, 4228A-225ML, 4228A-1L, 4228A-4L, 4228A-18.9L
- UFI: 1JS0-N01P-U00M-KS3V

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

- Application of the substance / the mixture High voltage protective coating
- Uses advised against Not available

· 1.3 Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

MG Chemicals Ltd. (Head Office)
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA
+(1) 905-331-1396
info@mgchemicals.com

MG Chemicals
Heame House, 23 Bliston Street
Sedgely Dudley DY3 1JA.
United Kingdom
+(44) 1663 362888

MG Chemicalst Ltd.
18-20, Msida Road,
Gzira, GZR 1401
MALTA

- Further information obtainable from: sds@mgchemicals.com

· 1.4 Emergency telephone number:

Verisk 3E (Access code: 335388)
+(44) 20 3514787
+(1) 760 476 3961
UK Toll free: +(0) 800 680 0425

Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

* SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

· Classification according to Regulation (EC) No 1272/2008

Flam. Liq. 3 H226 Flammable liquid and vapour.
Eye Irrit. 2 H319 Causes serious eye irritation.
STOT SE 3 H336 May cause drowsiness or dizziness.

· 2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB CLP regulation.

(Contd. on page 2)

— GB —

Safety data sheet

according to UK REACH

Page 2/12

Printing date 06.03.2025

Version number 2.01 (replaces version 2.00)

Revision: 06.03.2025

Trade name: 4228A

(Contd. of page 1)

Hazard pictograms



GHS02 GHS07

Signal word Warning

Hazard-determining components of labelling:

n-butyl acetate
heptan-2-one
butan-1-ol
2-methoxy-1-methylethyl acetate

Hazard statements

H226 Flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary statements

P102 Keep out of reach of children.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves, protective clothing, and eye 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.
P370+P378 In case of fire: Use CO₂, powder or water spray to extinguish.
P403+P235 Store in a well-ventilated place. Keep cool.
P501 Dispose of contents and container in accordance with local, regional, and national regulations.

Additional information:

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3 Other hazards Repeated exposure may cause skin dryness or cracking.

Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

Determination of endocrine-disrupting properties Endocrine Disruptor substance $\geq 0.1\%$ = none

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 123-86-4 EINECS: 204-658-1 Index number: 607-025-00-1	n-butyl acetate Flam. Liq. 3, H226; STOT SE 3, H336, EUH066	42%
CAS: 110-43-0 EINECS: 203-767-1 Index number: 606-024-00-3	heptan-2-one Flam. Liq. 3, H226; Acute Tox. 4, H302; Acute Tox. 4, H332	4%
CAS: 71-36-3 EINECS: 200-751-6 Index number: 603-004-00-6	butan-1-ol Flam. Liq. 3, H226; Eye Dam. 1, H318; Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335-H336	2%

(Contd. on page 3)

GB

Safety data sheet according to UK REACH

Page 3/12

Printing date 06.03.2025

Version number 2.01 (replaces version 2.00)

Revision: 06.03.2025

Trade name: 4228A

(Contd. of page 2)		
CAS: 108-65-6	2-methoxy-1-methylethyl acetate	<1%
EINECS: 203-603-9	Flam. Liq. 3, H226; STOT SE 3, H336	
Index number: 607-195-00-7		

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

* SECTION 4: First aid measures

· 4.1 Description of first aid measures

· **After inhalation:**

Remove person to fresh air and keep comfortable for breathing.
If feeling unwell: Call a POISON CENTRE or doctor.

· **After skin contact:**

Take off immediately all contaminated clothing.
Wash with plenty of soap and water.

· **After eye contact:**

Rinse cautiously with water for 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice or attention.

· **After swallowing:**

Rinse mouth.
Do NOT induce vomiting.
If symptoms persist consult doctor.

· 4.2 Most important symptoms and effects, both acute and delayed

See section 11 for additional information.

· 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media

· **Suitable extinguishing agents:**

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

· 5.2 Special hazards arising from the substance or mixture

Prevent fire-fighting wash from entering waterway or sewer system.
Vapors are heavier than air. Vapors may travel to sources of ignition near the ground. They can cause flash fire or ignite explosively.

· **Hazardous combustion products:** Carbon Oxides (CO_x)

· 5.3 Advice for firefighters

· **Protective equipment:** Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

(Contd. on page 4)

— GB —

Safety data sheet according to UK REACH

Page 4/12

Printing date 06.03.2025

Version number 2.01 (replaces version 2.00)

Revision: 06.03.2025

Trade name: 4228A

(Contd. of page 3)

Ensure adequate ventilation

Remove or keep away all sources of extreme heat or open flames.

Avoid breathing mist, spray, or vapors.

- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

- **6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Collect liquid in a sealable, chemical-resistant container.

Wash residue with a paper towel and place dirty towels in container.

Use soap and water to remove the last traces of residue.

- **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**

Wear protective gloves and eye protection.

Wash hands and exposed skin thoroughly after handling.

Take off contaminated clothing and wash it before reuse.

Avoid breathing mist, spray, or vapors.

Use only outdoors or in a well-ventilated area.

- **Information about fire - and explosion protection:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Use explosion-proof apparatus / fittings and spark-proof tools.

Ground and bond container and receiving equipment.

- **7.2 Conditions for safe storage, including any incompatibilities**

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

Keep in a dry and clean area, away from incompatible substances

Store in a well-ventilated place. Keep cool.

- **Information about storage in one common storage facility:** Not required.

- **Further information about storage conditions:**

Keep container tightly sealed.

Store locked up.

- **7.3 Specific end use(s)** See section 1.2

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

123-86-4 n-butyl acetate

WEL Short-term value: 966 mg/m³, 200 ppmLong-term value: 724 mg/m³, 150 ppm

(Contd. on page 5)

— GB —

Safety data sheet

according to UK REACH

Page 5/12

Printing date 06.03.2025

Version number 2.01 (replaces version 2.00)

Revision: 06.03.2025

Trade name: 4228A

(Contd. of page 4)

110-43-0 heptan-2-one	
WEL	Short-term value: 475 mg/m ³ , 100 ppm
	Long-term value: 237 mg/m ³ , 50 ppm
Sk	
71-36-3 butan-1-ol	
WEL	Short-term value: 154 mg/m ³ , 50 ppm
Sk	
108-65-6 2-methoxy-1-methylethyl acetate	
WEL	Short-term value: 548 mg/m ³ , 100 ppm
	Long-term value: 274 mg/m ³ , 50 ppm
Sk	

· **Additional information:**

The lists valid during the making were used as basis.

Refer to the national or regional occupational exposure limit regulation for abbreviations and acronyms.

· **8.2 Exposure controls**

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

Advice should be sought from respiratory protection specialists.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

If the product is heated or worker has a known allergic reaction, consider using a full mask with organic vapor cartridge or with an independent air supply.

· **Hand protection**

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.



Protective gloves: EN374

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 6)

— GB —

Safety data sheet

according to UK REACH

Page 6/12

Printing date 06.03.2025

Version number 2.01 (replaces version 2.00)

Revision: 06.03.2025

Trade name: 4228A

· Eye/face protection

(Contd. of page 5)



Safety glasses or tightly sealed goggles: EN 166

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Physical state	Liquid
· Form:	Viscous
· Colour:	Red
· Odour:	Aromatic
· Odour threshold:	Not determined.
· Melting point/freezing point:	Undetermined.
· Boiling point or initial boiling point and boiling range	116 °C
· Flammability	Flammable.
· Lower and upper explosion limit	
· Lower:	1.2 Vol %
· Upper:	7.3 Vol %
· Flash point:	25 °C
· Auto-ignition temperature:	220 °C
· Decomposition temperature:	Not determined.
· pH	Not determined.
· Viscosity:	
· Kinematic viscosity	Not determined.
· Dynamic:	Not determined.
· Solubility	
· water:	Not miscible or difficult to mix.
· Partition coefficient n-octanol/water (log value)	Not determined.
· Vapour pressure at 20 °C:	10.7 hPa (123-86-4 n-butyl acetate)
· Vapour pressure at 50 °C:	55 hPa
· Density at 20 °C:	0.81 g/cm ³
· Relative density:	Not determined.
· Vapour density (air=1):	Not determined.
· Particle characteristics	Not applicable.

· 9.2 Other information

· 9.2.1 Information with regard to physical hazard classes

· Flammable liquids	Flammable liquid and vapour.
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· 9.2.2 Other safety characteristics

· Evaporation rate	Not determined.
· Ignition temperature:	Product is not selfigniting.
· Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· Solvent content:	
· Organic solvents:	<49.00 %
· VOC (EC)	<49.00 %

(Contd. on page 7)

— GB —

Safety data sheet

according to UK REACH

Page 7/12

Printing date 06.03.2025

Version number 2.01 (replaces version 2.00)

Revision: 06.03.2025

Trade name: 4228A

(Contd. of page 6)

· Solids content: >51.0 %

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Chemically stable at normal temperatures and pressures.
 - **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid**
Avoid open flames, excessive heat, sparks, ignition sources, and incompatible substances.
- **10.5 Incompatible materials:**
Strong oxidizing agents
Strong bases
Strong acids
- **10.6 Hazardous decomposition products:**
No dangerous decomposition products known.
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
 - **Acute toxicity** Based on available data, the classification criteria are not met.

· LD/LC50 values relevant for classification:

ATE (Acute Toxicity Estimates)

Oral	LD50	20,297 mg/kg (rat)
Inhalative	LC50/4 h	>418 mg/kg (rabbit)

123-86-4 n-butyl acetate

Oral	LD50	>10,768 mg/kg (rat)
Dermal	LD50	>17,600 mg/kg (rabbit)
Inhalative	LC50/4 h	>21 mg/L (rat)

110-43-0 heptan-2-one

Oral	LD50	1,670 mg/kg (rat)
Dermal	LD50	12,600 µL/kg (rabbit)
Inhalative	LC50/4 h	>16.7 mg/kg (rabbit)

71-36-3 butan-1-ol

Oral	LD50	790 mg/kg (rat)
Dermal	LD50	3,400 mg/kg (rabbit)
Inhalative	LC50/4 h	8,000 mg/L (rat)

108-65-6 2-methoxy-1-methylethyl acetate

Oral	LD50	8,532 mg/kg (rat)
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(Contd. on page 8)

— GB —

Safety data sheet

according to UK REACH

Page 8/12

Printing date 06.03.2025

Version number 2.01 (replaces version 2.00)

Revision: 06.03.2025

Trade name: 4228A

(Contd. of page 7)

Dermal	LD/50	5 g/kg (rabbit)
Inhalative	LC50/4 h	35.7 mg/L (rat)

- **Primary irritant effect:**
 - **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
 - **Serious eye damage/irritation** Causes serious eye irritation.
 - **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** May cause drowsiness or dizziness.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **Summary of Effects and Symptoms by Routes of Exposure**
 - **Eyes:**
 - redness, serious irritation
 - blurred vision
 - pain
 - **Skin:**
 - redness, may cause mild irritation
 - dry skin
 - **Inhalation:**
 - dizziness or drowsiness
 - cough
 - sore throat
 - headache
 - Severe overexposure may lead to unconsciousness.
 - **Swallowed:**
 - nausea
 - abdominal pain
- **Subacute to chronic toxicity:**
 - **Delayed and immediate effects as well as chronic effects from short and long-term exposure**
 - Prolonged or repeated exposure may defat skin and cause skin dryness and cracking, and local redness and discomfort.

· 11.2 Information on other hazards

· Endocrine disrupting properties
None of the ingredients is listed.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:		
123-86-4 n-butyl acetate		
LC50 96h	18 mg/L (minnow)	
110-43-0 heptan-2-one		
EC50/ 48 h	>100 mg/L (daphnia)	
LC50 96h	131 mg/L (minnow)	

(Contd. on page 9)

— GB —

Safety data sheet according to UK REACH

Page 9/12

Printing date 06.03.2025

Version number 2.01 (replaces version 2.00)

Revision: 06.03.2025

Trade name: 4228A

(Contd. of page 8)

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
 - **Additional ecological information:**
 - **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
 - **Recommendation** This material and its container must be disposed of as hazardous waste.

· European waste catalogue	
HP3	Flammable
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

- **Uncleaned packaging:**
 - **Recommendation:**
Containers may still present a chemical hazard/ danger when empty.
Dispose of contents in accordance with all local, regional, national, and international regulations.
Where possible retain label warnings and SDS and observe all notices pertaining to the product.

* SECTION 14: Transport information

· 14.1 UN number or ID number	
· ADR, IMDG, IATA	UN1263
· 14.2 UN proper shipping name	
· ADR, IMDG	PAINT
· IATA	Paint

(Contd. on page 10)

— GB —

Safety data sheet

according to UK REACH

Page 10/12

Printing date 06.03.2025

Version number 2.01 (replaces version 2.00)

Revision: 06.03.2025

Trade name: 4228A

(Contd. of page 9)

· 14.3 Transport hazard class(es) · ADR, IMDG, IATA  · Class 3 Flammable liquids. · Label 3	
· 14.4 Packing group · ADR, IMDG, IATA III	
· 14.5 Environmental hazards: Not applicable.	
· 14.6 Special precautions for user Not applicable. · Hazard identification number (Kemler code): 30 · EMS Number: F-E, <u>S</u> -E · Stowage Category A	
· 14.7 Maritime transport in bulk according to IMO instruments Not applicable.	
· Transport/Additional information:  Limited Quantity 4228A-55ML, 4228A-225ML, 4228A-1L, 4228A-4L	
· ADR · Limited quantities (LQ) · Excepted quantities (EQ) · Transport category · Tunnel restriction code	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml 3 D/E
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation": UN 1263 PAINT, 3, III	

— GB —

(Contd. on page 11)

Safety data sheet according to UK REACH

Page 11/12

Printing date 06.03.2025

Version number 2.01 (replaces version 2.00)

Revision: 06.03.2025

Trade name: 4228A

(Contd. of page 10)

SECTION 15: Regulatory information

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

· Poisons Act

· Regulated explosives precursors (Part 1)
None of the ingredients is listed.
· Regulated poisons (Part 2)
None of the ingredients is listed.
· Reportable explosives precursors (Part 3)
None of the ingredients is listed.
· Reportable poisons (Part 4)
None of the ingredients is listed.

· Directive 2012/18/EU

- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category P5c FLAMMABLE LIQUIDS**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t

· REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

· DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II
None of the ingredients is listed.
· Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))
None of the ingredients is listed.
· Annex II - REPORTABLE EXPLOSIVES PRECURSORS
None of the ingredients is listed.
· Regulation (EC) No 273/2004 on drug precursors
None of the ingredients is listed.
· Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors
None of the ingredients is listed.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- H336 May cause drowsiness or dizziness.

(Contd. on page 12)

— GB —

Safety data sheet

according to UK REACH

Page 12/12

Printing date 06.03.2025

Version number 2.01 (replaces version 2.00)

Revision: 06.03.2025

Trade name: 4228A

(Contd. of page 11)

EUH066 Repeated exposure may cause skin dryness or cracking.

Classification according to Regulation (EC) No 1272/2008	
Flammable liquids	On basis of test data
Serious eye damage/irritation Specific target organ toxicity (single exposure)	The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

• **Department issuing SDS:** Regulatory department

• **Contact:** sds@mgchemicals.com

• **Date of previous version:** 28.01.2025

• **Version number of previous version:** 2.00

• **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

ATE: Acute toxicity estimate values

Flam. Liq. 3: Flammable liquids – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

• *** Data compared to the previous version altered.**

—GB—