Safety Data Sheet according to (EC) No 1907/2006 as amended

SDS No. : 364240
V010.2

LOCTITE EDAG 437 BULK

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

1.1. Product identifier
LOCTITE EDAG 437 BULK
UFI: X5XS-RWV9-620R-NYPT

1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use:
Coating

1.3. Details of the supplier of the safety data sheet
Henkel Ltd
Adhesives
Wood Lane End
HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 (1442) 278000

SDSinfo.Adhesive@henkel.com
For Safety Data Sheet updates please visit our website www.mysds.henkel.com or www.henkel-adhesives.com.

1.4. Emergency telephone number
24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Flammable liquids	Category 2
H225 Highly flammable liquid and vapour.	
Serious eye irritation	Category 2
H319 Causes serious eye irritation.	
Specific target organ toxicity - single exposure	Category 3
H336 May cause drowsiness or dizziness.	
Target organ: Central nervous system	
Acute hazards to the aquatic environment	Category 1
H400 Very toxic to aquatic life.	
Chronic hazards to the aquatic environment	Category 1
H410 Very toxic to aquatic life with long lasting effects.	

2.2. Label elements

Label elements (CLP):

Hazard pictogram:



Contains propyl acetate

Signal word: Danger

Hazard statement:
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H410 Very toxic to aquatic life with long lasting effects.

Supplemental information EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statement: Prevention
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 Avoid breathing mist/vapours.
P280 Wear eye protection/face protection.

Precautionary statement: Response P370+P378 In case of fire: Use CO2, dry chemical, or foam for extinction.

Precautionary statement: Storage P403+P235 Store in a well-ventilated place. Keep cool.

2.3. Other hazards

None if used properly.

Following substances are present in a concentration ≥0,1% and are identified as ED or PBT/vPvB on the REACH Candidate list or according to BPR or PPP:

None

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS No. EC No UK-REACH-Reg. No.	Concentration	Classification	Specific Conc. Limits, M-factors and ATEs	Add. Information
Copper powder 7440-50-8 231-159-6	40- < 60 %	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M acute = 10 M chronic = 1	
propyl acetate 109-60-4 203-686-1	20- < 40 %	Eye Irrit. 2, H319 STOT SE 3, H336 Flam. Liq. 2, H225		
n-butyl acetate 123-86-4 204-658-1	5- < 10 %	Flam. Liq. 3, H226 STOT SE 3, H336		EU OEL
isopentyl acetate 123-92-2 204-662-3	1- < 5 %	Flam. Liq. 3, H226		EU OEL
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5 202-414-9	0,1- < 1 %	Acute Tox. 4, H302 Skin Corr. 1C, H314 Eye Dam. 1, H318 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	M acute = 10 M chronic = 1	

If no ATE values are displayed, please refer to LD/LC50 values in Section 11.
For full text of the H - statements and other abbreviations see section 16 "Other information".

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Fresh air, oxygen supply, warmth; seek specialist medical attention.

Skin contact:
Immediately wash skin thoroughly with soap and water.

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

In case of adverse health effects seek medical advice.

Ingestion:
Rinse mouth, do not induce vomiting, consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed
EYE: Irritation, conjunctivitis.

Vapors may cause drowsiness and dizziness.

4.3. Indication of any immediate medical attention and special treatment needed
See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media:
Fine water spray
Carbon dioxide, foam, powder

Extinguishing media which must not be used for safety reasons:
Water jet (solvent-containing product).

5.2. Special hazards arising from the substance or mixture
Formation of toxic gases is possible during heating or in fires.

5.3. Advice for firefighters
Wear protective equipment.
Wear self-contained breathing apparatus.

Additional information:
Cool endangered containers with water spray jet.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid contact with skin and eyes.
Danger of slipping on spilled product.

6.2. Environmental precautions
Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up
Remove with liquid-absorbing material (sand, peat, sawdust).
Dispose of contaminated material as waste according to Section 13.

6.4. Reference to other sections
See advice in section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid skin and eye contact.
Ensure that workrooms are adequately ventilated.
See advice in section 8
Take measures to prevent the build-up of electrostatic charges.
Avoid open flames and sources of ignition.
Ground/bond container and receiving equipment.
Use explosion proof electric equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.

Hygiene measures:
Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.

7.2. Conditions for safe storage, including any incompatibilities

Ensure good ventilation/extraction.
Temperatures between + 5 °C and + 30 °C.
Store in a cool, dry, well-ventilated area.
Isolate from incompatible substances.
Temperatures between + 5 °C and + 30 °C.
Ensure that storage and workrooms are adequately ventilated.

7.3. Specific end use(s)
Coating

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

Ingredient [Regulated substance]	ppm	mg/m³	Value type	Short term exposure limit category / Remarks	Regulatory list
Copper 7440-50-8 [COPPER, FUME]		0,2	Time Weighted Average (TWA):		EH40 WEL
Copper 7440-50-8 [COPPER, INHALABLE DUSTS AND MISTS (AS CU)]		1	Time Weighted Average (TWA):		EH40 WEL
Copper 7440-50-8 [COPPER, INHALABLE DUSTS AND MISTS (AS CU)]		2	Short Term Exposure Limit (STEL):	15 minutes	EH40 WEL
Propyl acetate 109-60-4 [N-PROPYL ACETATE]	200	849	Time Weighted Average (TWA):		EH40 WEL
Propyl acetate 109-60-4 [N-PROPYL ACETATE]	250	1.060	Short Term Exposure Limit (STEL):	15 minutes	EH40 WEL
n-Butyl acetate 123-86-4 [BUTYL ACETATE]	150	724	Time Weighted Average (TWA):		EH40 WEL
n-Butyl acetate 123-86-4 [N-BUTYL ACETATE]	150	723	Short Term Exposure Limit (STEL):	Indicative	ECTLV
n-Butyl acetate 123-86-4 [N-BUTYL ACETATE]	50	241	Time Weighted Average (TWA):	Indicative	ECTLV
n-Butyl acetate 123-86-4 [BUTYL ACETATE]	200	966	Short Term Exposure Limit (STEL):	15 minutes	EH40 WEL
Isopentyl acetate 123-92-2 [PENTYL ACETATE (ALL ISOMERS)]	50	270	Time Weighted Average (TWA):		EH40 WEL
Isopentyl acetate 123-92-2 [ISOPENTYLACETATE]	50	270	Time Weighted Average (TWA):	Indicative	ECTLV
Isopentyl acetate 123-92-2 [ISOPENTYLACETATE]	100	540	Short Term Exposure Limit (STEL):	Indicative	ECTLV
Isopentyl acetate 123-92-2 [PENTYL ACETATE (ALL ISOMERS)]	100	541	Short Term Exposure Limit (STEL):	15 minutes	EH40 WEL
Silicon dioxide 112945-52-5 [SILICA, AMORPHOUS, INHALABLE DUST]		6	Time Weighted Average (TWA):		EH40 WEL
Silicon dioxide 112945-52-5 [SILICA, AMORPHOUS, RESPIRABLE DUST]		2,4	Time Weighted Average (TWA):		EH40 WEL
Silicon dioxide 112945-52-5 [Dust, respirable dust]		4	Time Weighted Average (TWA):		EH40 WEL
Silicon dioxide 112945-52-5 [Dust, inhalable dust]		10	Time Weighted Average (TWA):		EH40 WEL

Occupational Exposure Limits

Valid for

Ireland

Ingredient [Regulated substance]	ppm	mg/m³	Value type	Short term exposure limit category / Remarks	Regulatory list
Copper 7440-50-8 [COPPER]		0,2	Time Weighted Average (TWA):		IR_OEL
Copper 7440-50-8 [COPPER]		1	Time Weighted Average (TWA):		IR_OEL
Propyl acetate 109-60-4 [PROPYL ACETATE ISOMERS: N-PROPYL ACETATE]	100		Time Weighted Average (TWA):		IR_OEL
Propyl acetate 109-60-4 [PROPYL ACETATE ISOMERS: N-PROPYL ACETATE]	150		Short Term Exposure Limit (STEL):	15 minutes	IR_OEL
n-Butyl acetate 123-86-4 [N-BUTYL ACETATE]	150	723	Short Term Exposure Limit (STEL):	Indicative	ECTLV
n-Butyl acetate 123-86-4 [N-BUTYL ACETATE]	50	241	Time Weighted Average (TWA):	Indicative	ECTLV
n-Butyl acetate 123-86-4 [Butyl acetate]	150	723	Short Term Exposure Limit (STEL):	15 minutes Indicative OELV	IR_OEL
n-Butyl acetate 123-86-4 [Butyl acetate]	50	241	Time Weighted Average (TWA):	Indicative OELV	IR_OEL
Isopentyl acetate 123-92-2 [ISOPENTYL ACETATE]	50	260	Time Weighted Average (TWA):	Indicative OELV	IR_OEL
Isopentyl acetate 123-92-2 [ISOPENTYLACETATE]	50	270	Time Weighted Average (TWA):	Indicative	ECTLV
Isopentyl acetate 123-92-2 [ISOPENTYLACETATE]	100	540	Short Term Exposure Limit (STEL):	Indicative	ECTLV
Isopentyl acetate 123-92-2 [ISOPENTYL ACETATE]	100	520	Short Term Exposure Limit (STEL):	15 minutes Indicative OELV	IR_OEL
Silicon dioxide 112945-52-5 [SILICA, AMORPHOUS]		6	Time Weighted Average (TWA):		IR_OEL
Silicon dioxide 112945-52-5 [SILICA, AMORPHOUS]		2,4	Time Weighted Average (TWA):		IR_OEL
Silicon dioxide 112945-52-5 [DUSTS NON-SPECIFIC]		10	Time Weighted Average (TWA):		IR_OEL
Silicon dioxide 112945-52-5 [DUSTS NON-SPECIFIC]		4	Time Weighted Average (TWA):		IR_OEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Copper powder 7440-50-8	Soil				65 mg/kg		
Copper powder 7440-50-8	sewage treatment plant (STP)		230 µg/l				
Copper powder 7440-50-8	sediment (marine water)				676 mg/kg		
Copper powder 7440-50-8	aqua (freshwater)		7,8 µg/l				
Copper powder 7440-50-8	aqua (marine water)		5,2 µg/l				
Copper powder 7440-50-8	sediment (freshwater)				87 mg/kg		
propyl acetate 109-60-4	aqua (freshwater)		0,06 mg/l				
propyl acetate 109-60-4	aqua (marine water)		0,006 mg/l				
propyl acetate 109-60-4	sewage treatment plant (STP)		1 mg/l				
propyl acetate 109-60-4	sediment (freshwater)				0,16 mg/kg		
propyl acetate 109-60-4	sediment (marine water)				0,016 mg/kg		
propyl acetate 109-60-4	Soil				0,021 mg/kg		
propyl acetate 109-60-4	Freshwater - intermittent		0,6 mg/l				
n-Butyl acetate 123-86-4	aqua (freshwater)		0,18 mg/l				
n-Butyl acetate 123-86-4	aqua (marine water)		0,018 mg/l				
n-Butyl acetate 123-86-4	aqua (intermittent releases)		0,36 mg/l				
n-Butyl acetate 123-86-4	sewage treatment plant (STP)		35,6 mg/l				
n-Butyl acetate 123-86-4	sediment (freshwater)				0,981 mg/kg		
n-Butyl acetate 123-86-4	sediment (marine water)				0,0981 mg/kg		
n-Butyl acetate 123-86-4	Soil				0,0903 mg/kg		
n-Butyl acetate 123-86-4	Air						no hazard identified
n-Butyl acetate 123-86-4	Predator						no potential for bioaccumulation
isopentyl acetate 123-92-2	aqua (freshwater)		0,011 mg/l				
isopentyl acetate 123-92-2	aqua (marine water)		0,001 mg/l				
isopentyl acetate 123-92-2	sewage treatment plant (STP)		30 mg/l				
isopentyl acetate 123-92-2	sediment (freshwater)				0,335 mg/kg		
isopentyl acetate 123-92-2	sediment (marine water)				0,034 mg/kg		
isopentyl acetate 123-92-2	Soil				0,06 mg/kg		
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	aqua (freshwater)		0,03 µg/l				
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol	aqua (marine water)		0,003 µg/l				

95-38-5							
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	aqua (intermittent releases)		0,3 µg/l				
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	sewage treatment plant (STP)		0,27 mg/l				
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	sediment (freshwater)				0,376 mg/kg		
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	aqua (marine water)				0,0376 mg/kg		
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	Soil				0,075 mg/kg		

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Copper powder 7440-50-8	Workers	dermal	Acute/short term exposure - systemic effects		273 mg/kg	
Copper powder 7440-50-8	General population	inhalation	Acute/short term exposure - local effects		1 mg/m3	
Copper powder 7440-50-8	General population	inhalation	Long term exposure - local effects		1 mg/m3	
Copper powder 7440-50-8	General population	dermal	Acute/short term exposure - systemic effects		273 mg/kg	
Copper powder 7440-50-8	Workers	dermal	Long term exposure - systemic effects		137 mg/kg	
Copper powder 7440-50-8	General population	dermal	Long term exposure - systemic effects		137 mg/kg	
Copper powder 7440-50-8	General population	oral	Long term exposure - systemic effects		0,041 mg/kg	
propyl acetate 109-60-4	Workers	inhalation	Acute/short term exposure - local effects		840 mg/m3	
propyl acetate 109-60-4	Workers	inhalation	Long term exposure - local effects		420 mg/m3	
propyl acetate 109-60-4	General population	inhalation	Acute/short term exposure - local effects		300 mg/m3	
propyl acetate 109-60-4	General population	inhalation	Long term exposure - local effects		150 mg/m3	
n-Butyl acetate 123-86-4	Workers	inhalation	Long term exposure - systemic effects		300 mg/m3	no hazard identified
n-Butyl acetate 123-86-4	Workers	inhalation	Acute/short term exposure - systemic effects		600 mg/m3	no hazard identified
n-Butyl acetate 123-86-4	Workers	inhalation	Long term exposure - local effects		300 mg/m3	no hazard identified
n-Butyl acetate 123-86-4	Workers	inhalation	Acute/short term exposure - local effects		600 mg/m3	no hazard identified
n-Butyl acetate 123-86-4	Workers	dermal	Long term exposure - systemic effects		11 mg/kg	no hazard identified
n-Butyl acetate 123-86-4	Workers	dermal	Acute/short term exposure - systemic effects		11 mg/kg	no hazard identified
n-Butyl acetate 123-86-4	General population	inhalation	Long term exposure - systemic effects		35,7 mg/m3	no hazard identified
n-Butyl acetate 123-86-4	General population	inhalation	Acute/short term exposure - systemic effects		300 mg/m3	no hazard identified
n-Butyl acetate 123-86-4	General population	inhalation	Acute/short term exposure - local effects		300 mg/m3	no hazard identified
n-Butyl acetate 123-86-4	General population	dermal	Long term exposure - systemic effects		6 mg/kg	no hazard identified
n-Butyl acetate 123-86-4	General population	dermal	Acute/short term exposure - systemic effects		6 mg/kg	no hazard identified
n-Butyl acetate 123-86-4	General population	oral	Long term exposure -		2 mg/kg	no hazard identified

			systemic effects			
n-Butyl acetate 123-86-4	General population	oral	Acute/short term exposure - systemic effects		2 mg/kg	no hazard identified
n-Butyl acetate 123-86-4	General population	inhalation	Long term exposure - local effects		35,7 mg/m3	no hazard identified
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	Workers	dermal	Acute/short term exposure - systemic effects		2 mg/kg	
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	Workers	Inhalation	Acute/short term exposure - systemic effects		14 mg/m3	
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	Workers	dermal	Long term exposure - systemic effects		0,06 mg/kg	
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	Workers	Inhalation	Long term exposure - systemic effects		0,46 mg/m3	

Biological Exposure Indices:
None

8.2. Exposure controls:

Engineering controls:
Ensure good ventilation/suction at the workplace.

Respiratory protection:
In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387).
This recommendation should be matched to local conditions.
The product should only be used at workplaces with intensive ventilation/extraction.

Hand protection:
Chemical-resistant protective gloves (EN 374). Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374): Isobutylene-isoprene rubber (IIR; >= 0.7 mm thickness) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Isobutylene-isoprene rubber (IIR; >= 0.7 mm thickness) This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:
Protective eye equipment should conform to EN166.
Protective goggles

Skin protection:
Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.
Suitable protective clothing

Advices to personal protection equipment:
The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions.
Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Delivery form	paste
Colour	Copper
Odor	Solvent
Physical state	liquid
Melting point	Not applicable, Product is a liquid

Solidification temperature	< 0 °C (< 32 °F)
Initial boiling point	102 °C (215.6 °F)
Flammability	Flammable liquid
Explosive limits	
lower	1 %(V);
upper	10 %(V);
	Upper/lower explosion limit
Flash point	11 °C (51.8 °F)
Auto-ignition temperature	> 200 °C (> 392 °F)
Decomposition temperature	Not applicable, Substance/mixture is not self-reactive, no organic peroxide and does not decompose under foreseen conditions of use
pH	Not applicable, Product is non-soluble (in water).
Viscosity (kinematic) (20 °C (68 °F);)	> 20,5 mm2/s
Viscosity, dynamic (Brookfield; Instrument: RVT; 20 °C (68 °F); speed of rotation: 20 min-1)	3.000 - 6.000 mPa.s no method / method unknown
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Insoluble
Partition coefficient: n-octanol/water	Not applicable Mixture
Vapour pressure (20 °C (68 °F))	< 35 hPa
Vapour pressure (50 °C (122 °F))	< 200 hPa
Density (20 °C (68 °F))	1,65 g/cm3 no method / method unknown
Relative vapour density: (20 °C)	> 1
Particle characteristics	Not applicable Product is a liquid

9.2. Other information

Other information not applicable for this product

SECTION 10: Stability and reactivity

10.1. Reactivity
None if used for intended purpose.

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
See section reactivity

10.4. Conditions to avoid
No decomposition if used according to specifications.

10.5. Incompatible materials
None if used properly.

10.6. Hazardous decomposition products
None if used for intended purpose.
In case of fire toxic gases can be released.

SECTION 11: Toxicological information

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

Acute oral toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Copper powder 7440-50-8	LD50	> 2.500 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
propyl acetate 109-60-4	LD50	8.700 mg/kg	rat	not specified
n-butyl acetate 123-86-4	LD50	10.760 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
isopentyl acetate 123-92-2	LD50	7.400 mg/kg	rabbit	not specified
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	LD50	1.265 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)

Acute dermal toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Copper powder 7440-50-8	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
propyl acetate 109-60-4	LD50	> 17.800 mg/kg	rabbit	not specified
n-butyl acetate 123-86-4	LD50	> 14.112 mg/kg	rabbit	OECD Guideline 402 (Acute Dermal Toxicity)
isopentyl acetate 123-92-2	LD50	> 5.000 mg/kg	rabbit	not specified

Acute inhalative toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
Copper powder 7440-50-8	LC50	> 5,11 mg/l	dust/mist	4 h	rat	OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method)
propyl acetate 109-60-4	LC50	32 mg/l	vapour	4 h	rat	other guideline:
n-butyl acetate 123-86-4	LC50	> 23,4 mg/l	mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Copper powder 7440-50-8	not irritating		rabbit	EU Method B.4 (Acute Toxicity: Dermal Irritation / Corrosion)
n-butyl acetate 123-86-4	not irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	corrosive	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Copper powder 7440-50-8	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
n-butyl acetate 123-86-4	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Result	Test type	Species	Method
Copper powder 7440-50-8	not sensitising	Guinea pig maximisation test	guinea pig	EU Method B.6 (Skin Sensitisation)
n-butyl acetate 123-86-4	not sensitising	Guinea pig maximisation test	guinea pig	not specified

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Copper powder 7440-50-8	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
n-butyl acetate 123-86-4	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
n-butyl acetate 123-86-4	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
isopentyl acetate 123-92-2	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)

Carcinogenicity

No data available.

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
Copper powder 7440-50-8	NOAEL P 1500 ppm NOAEL F1 1000 ppm NOAEL F2 1000 ppm	two-generation study	oral: feed	rat	OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)
Copper powder 7440-50-8	NOAEL P 1000 ppm NOAEL F1 1000 ppm NOAEL F2 1000 ppm	two-generation study	oral: feed	rat	OECD Guideline 416 (Two-Generation Reproduction Toxicity Study)

STOT-single exposure:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Assessment	Route of exposure	Target Organs	Remarks
propyl acetate 109-60-4	May cause drowsiness or dizziness.			
n-butyl acetate 123-86-4	May cause drowsiness or dizziness.			

STOT-repeated exposure:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Based on available data, the classification criteria are not met.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
Copper powder 7440-50-8	NOAEL 1000 ppm	oral: feed	92 d	rat	EU Method B.26 (Sub-Chronic Oral Toxicity Test: Repeated Dose 90-Day Oral Toxicity Study in Rodents)
n-butyl acetate 123-86-4	NOAEL 125 mg/kg	oral: gavage	13 Weeks	rat	EPA OTS 798.2650 (90-Day Oral Toxicity in Rodents)
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	NOAEL 20 mg/kg	oral: gavage	31 - 51 d	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Aspiration hazard:

No data available.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

No data available.

SECTION 12: Ecological information

General ecological information:

Do not empty into drains / surface water / ground water.

12.1. Toxicity

Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Copper powder 7440-50-8	LC50	0,0149 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Copper powder 7440-50-8	NOEC	0,0107 mg/l	60 d	Salvelinus fontinalis	OECD Guideline 204 (Fish, Prolonged Toxicity Test: 14-day Study)
propyl acetate 109-60-4	LC50	56 - 64 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
n-butyl acetate 123-86-4	LC50	18 mg/l	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
isopentyl acetate 123-92-2	LC 50	11,1 mg/l	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	LC50	0,3 mg/l	96 h	Danio rerio	OECD Guideline 203 (Fish, Acute Toxicity Test)

Toxicity (aquatic invertebrates):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Copper powder 7440-50-8	EC50	0,011 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
propyl acetate 109-60-4	EC50	91,5 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
n-butyl acetate 123-86-4	EC50	44 mg/l	48 h	Daphnia sp.	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
isopentyl acetate 123-92-2	EC50	26,3 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	EC50	0,163 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic toxicity (aquatic invertebrates):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Copper powder 7440-50-8	NOEC	0,0105 mg/l	21 day	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
n-butyl acetate 123-86-4	NOEC	23,2 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Copper powder 7440-50-8	EC50	0,0314 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Copper powder 7440-50-8	NOEC	0,0133 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
propyl acetate 109-60-4	EC50	672 mg/l	72 h	Raphidocelis subcapitata (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
propyl acetate 109-60-4	NOEC	83,2 mg/l	72 h	Raphidocelis subcapitata (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
n-butyl acetate 123-86-4	EC50	674,7 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
n-butyl acetate 123-86-4	EC10	295,5 mg/l	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
isopentyl acetate 123-92-2	EC50	450 mg/l	72 h		OECD Guideline 201 (Alga, Growth Inhibition Test)
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	NOEC	0,011 mg/l	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	EC50	0,03 mg/l	72 h	Desmodesmus subspicatus	OECD Guideline 201 (Alga, Growth Inhibition Test)

Toxicity (microorganisms):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
propyl acetate 109-60-4	EC10	170 mg/l	16 h		not specified
n-butyl acetate 123-86-4	IC50	356 mg/l	40 h	Ciliate (Tetrahymena pyriformis)	other guideline:
isopentyl acetate 123-92-2	EC10	670 mg/l	30 min		not specified
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	IC50	26 mg/l	3 h	activated sludge, domestic	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

12.2. Persistence and degradability

Biodegradability (Screening Tests):
The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
propyl acetate 109-60-4	readily biodegradable	aerobic	72 %	20 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
n-butyl acetate 123-86-4	readily biodegradable	aerobic	83 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
isopentyl acetate 123-92-2	readily biodegradable	aerobic	88 %	28 day	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
2-(2-Heptadec-8-enyl-2-imidazolin-1-yl)ethanol 95-38-5	not readily biodegradable.	aerobic	1 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)

(Bio)degradability (Simulation Tests):
No data available.

12.3. Bioaccumulative potential

Partition Coefficient (octanol/water)
The table below presents the data of the classified substances present in the mixture.

Hazardous substances CAS-No.	LogPow	Temperature	Method
propyl acetate 109-60-4	1,24		not specified
n-butyl acetate 123-86-4	2,3	25 °C	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
isopentyl acetate 123-92-2	2,7	35 °C	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

Bioconcentration factor (BCF)
No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT / vPvB / PMT / vPvM assessment

PBT/vPvB
This mixture does not contain any substances that are assessed to be a PBT or vPvB.
Based on available data, the classification criteria are not met.

PMT/vPvM
This mixture does not contain any substances that are assessed to be a PMT or vPvM.
Based on available data, the classification criteria are not met.

12.6. Endocrine disrupting properties

No data available.

12.7. Other adverse effects

The product contains organic solvents which are insoluble in water. According to the requirements of the ATV regulations for the dis charge of wastewater from commercial and industrial plant, organic solvents which are immiscible with water can only be dis charged to an extent which corresponds to their solubility in water. The local discharge regulations take precedence.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:
In consultation with the responsible local authority, must be subjected to special treatment.

Waste code

080111

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

SECTION 14: Transport information

14.1. UN number or ID number

ADR	1263
RID	1263
ADN	1263
IMDG	1263
IATA	1263

14.2. UN proper shipping name

ADR	PAINT
RID	PAINT
ADN	PAINT
IMDG	PAINT (Copper)
IATA	Paint

14.3. Transport hazard class(es)

ADR	3
RID	3
ADN	3
IMDG	3
IATA	3

14.4. Packing group

ADR	II
RID	II
ADN	II
IMDG	II
IATA	II

14.5. Environmental hazards

ADR	Environmentally Hazardous
RID	Environmentally Hazardous
ADN	not applicable
IMDG	Marine Pollutant
IATA	not applicable

14.6. Special precautions for user

ADR	Special provision 640D

	Tunnelcode: (D/E)
RID	Special provision 640D
ADN	Special provision 640D
IMDG	not applicable
IATA	not applicable

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

Ozone Depleting Substance (ODS) (Regulation (EC) No 2024/590):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable

VOC content (2010/75/EU)	36,3 %
Seveso III (2012/18/EU):	E1, Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1 P5c, Flammable liquids, Categories 2 or 3 not covered by P5a and P5b

National regulations/information (Great Britain):

Remarks	Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, e.g COSHH Essentials. EH40 Occupational Exposure Limits Chemicals (Hazard Information & Packaging for Supply) Regulations. The Personnel Protective Equipment at Work Regulations. The Carriage of Dangerous Goods by Road Regulations. The Health & Safety at Work Act 1974. (Note: Use latest editions/amendments of above referenced documents.)

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text
of all abbreviations indicated by codes in this safety data sheet are as follows:

H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Abbreviations and acronyms:

ADG(-Code): Australian Dangerous Goods (Code)
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road
ASTM: American Society for Testing and Materials
ATE: acute toxicity estimate
AS: Australian Standard
AwSV: Ordinance on Installations for the Handling of Substances Hazardous to Water
CAS: Chemical Abstract Service
CLP: Regulation (EC) No 1272/2008
CMR: cancerogenic, mutagenic or reprotoxic
DIN: German Institute for Standardization
ECx: Effective concentration (x% effective level)
ECHA: European Chemicals Agency
EC-Nummer: Substance number in the EU-inventories EINECS/ELINCS
ECTLV: European community threshold limit value
ED:Substance identified as having endocrine disrupting properties
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
EN : European Standard
ENCS: Japanese chemical inventory
EPA: US Environmental Protection Agency
EU: European Union
EU EXPLD1: Substance listed in Annex I, Reg (EC) No. 2019/1148
EU EXPLD2: Substance listed in Annex II, Reg (EC) No. 2019/1148
EWC: European Waste Catalogue
GHS: Globally Harmonised System for Classification and Labelling of Chemicals
GLP: Good Laboratory Practice
HSNO: Hazardous Substances and New Organisms
IARC: International Agency for Research of Cancer
IATA: International Air Transport Association
IBC-Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50: half maximal inhibitory concentration
ICAO: International Civil Aviation Organization
IMDG-Code: International Maritime Code for Dangerous Goods
IMO: International Maritime Organization
ISO: International Standardization Organisation
LC50: Median lethal concentration
LD50: Median lethal dose
MARPOL: International Convention for the Prevention of Marine Pollution from Ships
n.o.s.: not otherwise specified
NO(A)EC: No (adverse) effect concentration
NO(A)EL: No (adverse) effect level
NZS: New Zealand Standard
OECD: Organisation for Economic Co-operation and Development
OEL: Occupational Exposure Limit
OPPT: US EPA Office of Pollution Prevention and Toxics
OPPTS: US EPA Office of Prevention, Pesticides and Toxic Substances
PBT: Persistent, bioaccumulative, toxic

PMT: Persistent, mobile and toxic
(Q)SAR: (Quantitative) structure–activity relationship
REACH: Regulation (EC) No. 1907/2006
RID: Regulations concerning the International Transport of Dangerous Goods by Rail
SADT: Self Accelerating Decomposition Temperature
SDS: Safety Data Sheet
STOT: Specific Target Organ Toxicity
STOT SE: Specific Target Organ Toxicity - single exposure
STOT RE: Specific Target Organ Toxicity - repeated exposure
SUSMP: Standard for the Uniform Scheduling of Medicines and Poisons
SVHC: Substance of very high concern (REACH Candidate List)
TRGS: German Technical Rules for hazardous substances
UN: United Nations
VOC: Volatile Organic Compound
814.018 VOC Reg CH: Swiss Ordinance 814.018 on the Incentive Tax on Volatile Organic Compounds
vPvB: Very persistent, very bioaccumulative
vPvM: Very persistent and very mobile
VwVwS: Administrative Regulation on Substances Hazardous to Waters
WGK: Water hazard class

Further information:

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