

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 30.05.2022

Version number 1.1 (replaces version 1.0)

Revision: 30.05.2022

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

- **1.1 Product identifier**
- **Trade name:**
KREUL Transfer Marker edge, XXL
(Safety data sheet for the included ink.)
- **Article number:** 49931, 49932, 499300
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture**
Transfer Marker.
For artists and hobby user.
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
C. KREUL GmbH & Co. KG
Carl-Kreul-Straße 2
D-91352 HALLERNDORF
DEUTSCHLAND
Tel. + 49 (0)9545 / 925 - 0
Fax + 49 (0)9545 / 925 - 511
E-Mail: info@c-kreul.de
- **Further information obtainable from:**
Product Safety Department:
Treiber, b.treiber@c-kreul.de
- **1.4 Emergency telephone number:** +44 (0)171 635 91 91

2 Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



STOT SE 3 H336 May cause drowsiness or dizziness.

2.2 Label elements

EC Regulation 1907/2006 (UK REACH) differentiates between substances, mixtures and articles. In accordance with the definition of articles in UK REACH, the European Writing Instrument Manufacturer's Association (EWIMA) considers writing instruments, marker pens etc. to be articles. However, no safety data sheets are provided for articles. In contrast, safety data sheets are mandatory for substances and mixtures. For this reason, the information in the safety data sheet provided always refers to the basic ink and not to the product as a whole.

- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**



GHS02

GHS07

- **Signal word** Warning

Hazard-determining components of labelling:

2-methoxy-1-methylethyl acetate

Hazard statements

H226 Flammable liquid and vapour.

H336 May cause drowsiness or dizziness.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

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- P102 Keep out of reach of children.
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P271 Use only outdoors or in a well-ventilated area.
 P370+P378 In case of fire: Use CO₂, powder or water spray to extinguish.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

3.2 Mixtures

- **Description:** Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 108-65-6 EINECS: 203-603-9 Index number: 607-195-00-7 Reg.nr.: 01-2119475791-29-xxxx	2-methoxy-1-methylethyl acetate ⚠ Flam. Liq. 3, H226; ⚠ STOT SE 3, H336	25-<50%
CAS: 687-47-8 EINECS: 211-694-1 Index number: 607-129-00-7 Reg.nr.: 01-2119516234-49-XXXX	ethyl (S)-2-hydroxypropionate ⚠ Flam. Liq. 3, H226; ⚠ Acute Tox. 3, H331; ⚠ Eye Dam. 1, H318; ⚠ STOT SE 3, H335	10-<25%
	Ester of inorganic acid ⚠ Eye Irrit. 2, H319	10-<25%
	Ester of aliphatic acid ⚠ Flam. Liq. 3, H226	5-<10%
CAS: 112-07-2 EINECS: 203-933-3 Index number: 607-038-00-2 Reg.nr.: 01-21194475112-47-XXXX	2-butoxyethyl acetate ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	5-<10%

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

4 First aid measures

4.1 Description of first aid measures

- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Wash with water and acidic soap.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Remove contact lenses.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

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**
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Keep away from ignition sources.
Wear protective equipment. Keep unprotected persons away.

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6.2 Environmental precautions:

Keep contaminated washing water and dispose of appropriately.
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).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

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.

7 Handling and storage

7.1 Precautions for safe handling

Keep receptacles tightly sealed.
Keep away from heat and direct sunlight.

Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: Store in a cool location.
Information about storage in one common storage facility: Do not store together with oxidising and acidic materials.

Further information about storage conditions:

Store receptacle in a well ventilated area.
Keep container tightly sealed.
Protect from heat and direct sunlight.

Storage class: 3

7.3 Specific end use(s) See chapter 1.2.

8 Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

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

112-07-2 2-butoxyethyl acetate

WEL	Short-term value: 332 mg/m ³ , 50 ppm
	Long-term value: 133 mg/m ³ , 20 ppm
	Sk

DNELs

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

Oral	long-term exposure-systemic effects	1.67 mg/kg (general population)
Dermal	long-term exposure-systemic effects	54.8 mg/kg bw/d (general population)
		153.5 mg/kg bw/d (worker)
Inhalative	long-term exposure-systemic effects	33 mg/m ³ (general population)
		275 mg/m ³ (worker)

687-47-8 ethyl (S)-2-hydroxypropionate

Inhalative	long-term exposure-systemic effects	6 mg/m ³ (general population)
		1.6 mg/m ³ (worker)

112-07-2 2-butoxyethyl acetate

Dermal	chronic - systemic effect	169 mg/kg bw/d (worker)
Inhalative	chronic - systemic effect	133 mg/m ³ (worker)

PNECs

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

water	6.35 mg/l
freshwater	0.635 mg/l
marine water	0.0635 mg/l
sewage treatment plant (STP)	100 mg/l
freshwater sediment	3.29 mg/kg
marine sediment	0.329 mg/kg
soil	0.29 mg/kg

687-47-8 ethyl (S)-2-hydroxypropionate

water	3.2 mg/l
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112-07-2 2-butoxyethyl acetate

freshwater	0.304 mg/l
marine water	0.03 mg/l
sewage treatment plant (STP)	90 mg/l
freshwater sediment	2.03 mg/kg
marine sediment	0.203 mg/kg
soil	0.415 mg/kg

· **Additional information:** The lists valid during the making were used as basis.

· 8.2 Exposure controls

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

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

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Do not eat, drink, smoke or sniff while working.

Wash hands before breaks and at the end of work.

· **Respiratory protection:** Use suitable respiratory protective device when high concentrations are present.

· **Hand protection**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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

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.

· **For the permanent contact gloves made of the following materials are suitable:**

Butyl rubber, BR

Recommended thickness of the material: ≥ 0.7 mm

Value for the permeation: Level ≤ 480 min

· **As protection from splashes gloves made of the following materials are suitable:**

Butyl rubber, BR

Recommended thickness of the material: ≥ 0.7 mm

Value for the permeation: Level ≤ 480 min

· **Eye/face protection**



Tightly sealed goggles

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· **General Information**

· **Colour:**

Colourless

· **Odour:**

Solvent-like

· **Melting point/freezing point:**

Undetermined.

· **Boiling point or initial boiling point and boiling range**

Undetermined.

· **Flammability**

Not applicable.

· **Lower and upper explosion limit**

· **Lower:**

1.5 Vol %

· **Upper:**

11.4 Vol %

· **Flash point:**

59 °C

· **Ignition temperature:**

315 °C

· **Decomposition temperature:**

Not determined.

· **pH**

Not determined.

· **Viscosity:**

· **Kinematic viscosity**

Not determined.

· **Dynamic:**

Not determined.

· **Solubility**

· **water:**

Not determined.

· **Partition coefficient n-octanol/water (log value)**

Not determined.

· **Vapour pressure at 20 °C:**

3.4 hPa

· **Density and/or relative density**

· **Density at 20 °C:**

1.038 g/cm³

· **Relative density**

Not determined.

· **Vapour density**

Not determined.

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- **9.2 Other information**
- **Appearance:**
- **Form:** Fluid
- **Important information on protection of health and environment, and on safety.**
- **Auto-ignition temperature:** Product is not selfigniting.
- **Explosive properties:** Not determined.
- **Solvent content:**
- **VOC (EC)** 40.00 %
- **Change in condition**
- **Evaporation rate** Not determined.

- **Information with regard to physical hazard classes**
- **Explosives** Void
- **Flammable gases** Void
- **Aerosols** Void
- **Oxidising gases** Void
- **Gases under pressure** Void
- **Flammable liquids**
Flammable liquid and vapour.
- **Flammable solids** Void
- **Self-reactive substances and mixtures** Void
- **Pyrophoric liquids** Void
- **Pyrophoric solids** Void
- **Self-heating substances and mixtures** Void
- **Substances and mixtures, which emit flammable gases in contact with water** Void
- **Oxidising liquids** Void
- **Oxidising solids** Void
- **Organic peroxides** Void
- **Corrosive to metals** Void
- **Desensitised explosives** Void

10 Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **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** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide

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	18,800 mg/kg (rat)
Dermal	LD50	15,800 mg/kg
Inhalative	LC50/4h	>10.7–14.1 mg/m ³ (rat)

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

Oral	LD50	8,532 mg/kg (rat)
Dermal	LD50	>5,000 mg/kg (rab)
		>2,000 mg/kg (rat) (OECD 401)
Inhalative	LC50/4h	>10,000 mg/l /4h (rat)

687-47-8 ethyl (S)-2-hydroxypropionate

Oral	LD50	>2,000 mg/kg (rat) (OECD 401)
Dermal	LD50	>5,000 mg/kg (rabbit)
Inhalative	LC50/4h	>5.4 mg/m ³ (rat) (OECD 403)

Ester of aliphatic acid

Oral	LD50	5,001 mg/kg (rat)
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112-07-2 2-butoxyethyl acetate

Oral	LD50	1,880 mg/kg (rat) (OECD 401)
Dermal	LD50	1,580 mg/kg (rabbit) (ECHA)

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Inhalative | LC50/4h | >2.66 mg/m³ (rat) (EU B.1, ECHA)

- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**
Ethyl-(S)-2-hydroxypropionat (CAS 687-47-8): Experimental tests done on this blend by certified laboratories have evidenced that this product is not dangerous for eyes contact. Accordingly to OECD 491 – August 2016
- **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.

· **11.2 Information on other hazards**· **Endocrine disrupting properties**

None of the ingredients is listed.

12 Ecological information

· **12.1 Toxicity**· **Aquatic toxicity:****108-65-6 2-methoxy-1-methylethyl acetate**

EC50	>500 mg/l /48h (daphnia magna)
	>100 mg/l /21d (daphnia magna) (OECD 211)
NOEC	47.5 mg/l /48d (oryzias latipes) (OECD 204)
(EbCx) 10%	>1,000 mg/l (microorganisms)
ErC50	>1,000 mg/l /96h (pseudokirchneriella subcapitata)
LC50	63.5 mg/l (oryzias latipes) (OECD 204)
	180 mg/l /96h (oncorhynchus mykiss)
LOEC	>1,000 mg/l /96h (pseudokirchneriella subcapitata)

687-47-8 ethyl (S)-2-hydroxypropionate

EC50	683 mg/l /48h (daphnia magna) (OECD 202)
NOEC	320 mg/l /72h (algae) (OECD 201)
	320 mg/l /48h (daphnia magna) (OECD 202)
ErC50	3,500 mg/l /72h (pseudokirchneriella subcapitata) (OECD 201)
LC50	320 mg/l /96h (danio rerio) (OECD 203)

112-07-2 2-butoxyethyl acetate

EC50	37 mg/l /48h (daphnia magna) (EU B.1, ECHA)
EBC50	520 mg/l /72h (pseudokirchneriella subcapitata) (ISO 8692, ECHA)
(EbCx) 10%	30.4 mg/l /7d (ceriodaphnia dubia) (OECD 211)
ErC50	1,570 mg/l /72h (pseudokirchneriella subcapitata) (ISO 8692, ECHA)
LC50	<40 mg/l /96h (oncorhynchus mykiss) (EU B.1, ECHA)

- **12.2 Persistence and degradability** Easily biodegradable
- **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:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **14.1 UN number or ID number**
- **ADR, IMDG, IATA** UN1993

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<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA 	1993 FLAMMABLE LIQUID, N.O.S. (2-methoxy-1-methylethyl acetate, ETHYL LACTATE) FLAMMABLE LIQUID, N.O.S. (2-methoxy-1-methylethyl acetate, ETHYL LACTATE)
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR, IMDG, IATA 	
 <ul style="list-style-type: none"> · Class · Label 	3 Flammable liquids. 3
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	III
<ul style="list-style-type: none"> · 14.5 Environmental hazards: 	Not applicable.
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Stowage Category 	Warning: Flammable liquids. 30 F-E, S-E A
<ul style="list-style-type: none"> · 14.7 Maritime transport in bulk according to IMO instruments 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · 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
<ul style="list-style-type: none"> · 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
<ul style="list-style-type: none"> · UN "Model Regulation": 	UN 1993 FLAMMABLE LIQUID, N.O.S. (2-METHOXY-1-METHYLETHYL ACETATE, ETHYL LACTATE), 3, III

15 Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **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
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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.
- H312 Harmful in contact with skin.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H331 Toxic if inhaled.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- H336 May cause drowsiness or dizziness.
- **Department issuing SDS:** Product Safety Department
- **Contact:** B. Treiber, b.treiber@c-kreul.de

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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)
DNEL: Derived No-Effect Level (UK REACH)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 3: Acute toxicity – Category 3
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.**

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