

SAFETY DATA SHEET

MU plotting ink

Product information / preparation / company name

Product information

Writing ink, type MU 30 ml Art. no. 86 62 12 30
 Writing ink, type MU 5 x 1 ml Art. no. 86 62 12 32

Manufacturer/Supplier:

Murrplastik Systemtechnik GmbH
 Fabrikstraße 10
 71570 Oppenweiler




Information providing division: Department: ACS

Composition / indication of ingredients

Chemical characteristics

Hazardous Components:

Hazardous to health as defined by the Dangerous Substances Directive 67/548/EEC

CAS: 78-59-1 EINECS: 201-126-0	3,5,5-Trimethyl-2-cyclohexen-1-one	 Xn, Xi; R 21/22-36/37-40	40 - 50%
CAS: 108-83-8 EINECS: 203-620-1	2,6-Dimethyl-4-heptanone	 Xi; R 10-37	20 - 30%
CAS: 99872-50-4	N-Methyl-2-pyrrolidone	 Xi; R 36/38	10 - 15%

Additional information The wording of the hazard warnings given can be found in the section "Other information"

Potential Hazards

Hazard description:



Xn Harmful

Information concerning particular hazards for human and environment:

The product requires classification on the basis of the method of calculation given in the "General Classification Guideline for Preparations in the EC" (current version).

R 21/22 Harmful in contact with skin and if swallowed.
R 36/37 Irritating to eyes and respiratory system.
R 40 Limited evidence of a carcinogenic effect.

First Aid Measures

General instructions:

With symptoms occurring or in cases of doubt consult a doctor.

In case of unconsciousness place patient stably in side position. Do not administer orally anything.

Inhalation:

Supply fresh air.

Place patient in rest position and keep warm.

Skin contact:

Remove soiled and soaked clothing immediately. Wash skin wetted by substance thoroughly with soap and water or use appropriate cleanser.

DO NOT use solvents or thinners.

Eye contact:

Keep eyelids open and rinse thoroughly for at least 10 minutes with clean running water.

Remove contact lenses. Consult a doctor.

Ingestion: DO NOT induce vomiting. Consult a doctor

Fire-fighting measures

Suitable extinguishing agents:

Foam (alcohol resistant), carbon dioxide, powder; water spray jet.

Unsuitable extinguishing agents for safety reasons:

Water with full jet

Particular hazards from material, the product of its combustion or developing gasses

Inhaling dangerous products of decomposition can cause severe injury.

Self-contained breathing apparatus may be required.

Produces heavy, black smoke on combustion.

Cool closed containers near the source of the fire with an atomised water mist

Other information:

Ensure all extinguisher water is collected.

Accidental release measures

Personal precautionary measures:

Ventilate room well.

Environmental conservation measures:

If rivers, lakes or waste water pipes become polluted, inform the relevant regulatory authority in accordance with local laws.

Do not permit disposal into sewer systems. If bodies of water or the sewer system become contaminated, inform the relevant regulatory authority.

Procedure for cleanup/collection:

Cordon off substance spills with non-flammable, absorbent materials (e.g. sand, earth, diatomite, vermiculite) and collect in designated containers for disposal in accordance with local provisions.

Clean preferably with cleaning agents. Avoid all possible use of solvents.

Handling and storage

Handling:

Safe handling:

Use the material only in locations kept free of naked flames, fire and other sources of ignition.

During decanting, carry out earthing procedures and use electrically conductive tubing (see "Guideline for the Avoidance of Ignition Hazards resulting from Electrostatic Charge" ZH 1/200).

Use non-sparking tools.

Avoid contact with the eyes and skin. Do not inhale vapour. Do not eat, drink or smoke while working.

See next section for personal protective equipment. Follow protective and safety measures as given by law. Do not exceed local occupational exposure limits, where set (see next section).

Note on fire or explosion prevention: Vapours can form an explosive mixture in air.

Storage:

Storage room and container requirements:

Keep containers tightly shut. No smoking.

Seal opened containers carefully and store upright to avoid all possible leakages.

Additional information for safe product storage:

Always keep in containers that match original container specifications. Store in a dry and well-ventilated place. Protect from heat and direct sunlight. Store in compliance with the provisions of the water authorities in connection with the Federal Water Act (WHG) and state regulations on the storage of substances hazardous to water (VAWS).

Follow instructions on label.

Storage class:

Classification acc. to occupational safety regulations (BetrSichV): -

Limiting and monitoring exposure/personal protective equipment

Additional notes on the design of technical equipment:

If relevant, use technical measures to ensure compliance with threshold limit values. This can be achieved by using good general exhaust air collection or, if practicable, by deploying local suction removal.

Components with workplace related threshold values that must be monitored

(Where stated, values are taken from the lists applicable during creation (e.g. TRGS 900 for the Federal Republic of Germany.)

78-59-1 3,5,5-Trimethyl-2-cyclohexen-1-one (40 - 50%)

AGW 11 mg/m³, 2 ml/m³

2(I);DFG, Y, H

108-83-8 2,6-Dimethyl-4-heptanone (20 - 30%)

For occupational exposure limits, cf. IIb

Personal protective equipment:

Respiratory protection:

If technical measures make compliance with threshold limit values impossible, then suitable breathing apparatus should be worn for brief periods only.

Hand protection:

Use gloves if contact is prolonged or repeated.

Protective creams can protect exposed areas of skin, but should not be applied if these areas have already been in contact with the product.

Glove material must be impermeable and resistant to the product/the preparation.

Glove material

Suitable protective gloves include those from KCL GmbH, 36124 Eichenzell, Germany, email: vertrieb@kcl.de, with the following specification (tested to EN 374)

Recommended protective gloves:

Article / Name / Material / Material Thickness / Penetration Time Remarks

No. 730 / Camatril Velours / Nitrile / 0.4 mm Level 6 > 480 min. Full contact

No. 743 / Dermatril / Nitrile / 0.2 mm Level 2 > 30 min. Splash contact

This recommendation applies only to the product as supplied by us and for the specified intended purpose.

Permeation time for glove material

Consult the glove manufacturer for the precise penetration time and comply with this value.

Eye protection: Wear protective goggles to guard against liquid splashes.

Body protection:

Wash areas of skin thoroughly following contact.

Work clothing should not be made from textiles that exhibit a dangerous tendency to fuse on combustion.

Physical/chemical properties

General information

Form:	liquid
Colour:	See product designation
Odour:	Characteristic

State change

Boiling point/Boiling range:	168 °C
Flash point:	> 61 °C
Ignition point:	345.0 °C
Explosion limits:	
Lower:	Approx. 0.8 vol %
Upper:	Approx. 6.25 vol %
Vapour pressure at 20 °C:	<2.6 hPa
Density at 20 °C:	Approx. 0.96 g/cm ³
Soluble in/miscible in	
Water:	Insoluble/poorly soluble.

Stability and reactivity

Thermal decomposition/conditions to avoid:

Stable when recommended standards for storage and handling are observed (see section on Handling and Storage).

Products to be avoided:

To avoid exothermic reactions, keep away from oxidizing agents and strongly acidic or basic materials.

Hazardous degradation products:

On combustion, dangerous decomposition products are formed, such as: carbon dioxide, carbon monoxide and smoke.

Toxicological information

Sprays of liquid that make contact with the eyes can cause irritation and temporary damage. The preparation is classified according to the conventional method (calculation method from the German Hazardous Substances Directive/EU Directive 1999/45/EC). Prolonged or repeated contact with the product impairs the skin's natural moisturising ability, causing it to dry out. The product can enter the body through the skin.

Acute toxicity:

LD/LC50 values that are relevant for classification:

78-59-1 3,5,5-Trimethyl-2-cyclohexen-1-one

Oral LD50 1500 mg/kg (rbt)

DermalLD50 1500 mg/kg (rbt)

Environmental information

The product must not be permitted to enter sewers, watercourses or the ground.

Disposal notes

Product:

Recommendation: Do not permit disposal into sewer systems.

European Waste Catalogue08 03 12: Printer ink wastes containing hazardous substances

Untreated packaging:

Recommendation:

Incorrectly emptied receptacles and product residues are classified as special waste.

Empty containers are to be sent for scrap recycling or reconditioning.

Transport information

Product not subject to dangerous goods provisions for road (ADR), rail (RID), sea (IMDG) and air (ICAO/IATA).

Transport by sea IMDG/GGVSee:

Marine pollutant: No

Regulatory information

Labelling according to EC-regulations:

Code letter and product hazard designation:



Xn Harmful

Specific hazardous constituents for labelling: 3,5,5-Trimethyl-2-cyclohexen-1-one

R -Phrases:

21/22 Harmful in contact with skin and if swallowed.

36/37 Irritating to eyes and respiratory system.

40 Limited evidence of a carcinogenic effect.

S-Phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

29/35 Do not empty into drains; This material and its container must be disposed of in a safe way.

36/37 Wear suitable protective clothing and gloves.

National regulations:

Classification acc. to occupational safety regulations (BetrSichV): -

Air Quality Control

Class Proportion in %

I 40 - 50

NK 20 - 30

VOC content 86.00 %

- Water hazard class (WHC):

WHC 2: Hazardous to water.

(According to VwVwS Appendix 4)

Swiss poison class:

Swiss VOC Directive 14.00 %

Additional information

The information given in this safety data sheet presents our current state of understanding in terms of current legislation at both a national and EU level. However, we cannot know the working conditions of each user, nor are these under our control. The user is thus responsible for compliance with all of the necessary legal provisions. The information presented in this safety data sheet describes product safety requirements and does not guarantee that a product has certain properties.

Relevant R-phrases

- 10 Flammable
- 21/22 Harmful in contact with skin and if swallowed.
- 36/37 Irritating to eyes and respiratory system.
- 36/38 Irritating to eyes and skin.
- 37 Irritating to respiratory system
- 40 Limited evidence of a carcinogenic effect.