

Marabu 印刷油墨  
重金屬含量**Material Safety Data Sheet**

according to 91/155/EC

Manufacturer : Marabuwerke GmbH &amp; Co. D-71732 Tamm

Product number: 3227, 3237, 3247

Trade name : MARASTAR SR, ink shades 020-273, 636-868

Marabu Printing date : 25.02.00

Reviewed on : 01.09.97

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**01. Identification of substance, preparation and company**Trade name

MARASTAR SR, ink shades 020-273, 636-868

Manufacturer/Supplier

Marabuwerke GmbH &amp; Co.

Street/P.O. box

Asperger Str. 4

Nationality code/Postcode/Town/City

D-71732 Tamm

Telephone/Telefax

Telefon : 07141/691-0

Telefax : 07141/691-235

Emergency information

Telefon : 07141/691-116 (Frau Heller)

**02. Composition/Information on components**Chemical characterizationScreen printing ink based on acrylic resins  
and on solventsHazardous components4-HYDROXY-4-METHYLPENTAN-2-ONEConcentration : 10 - 45 % CAS number : 123-42-2  
Symbol : Xi R : 36CYCLOHEXANONEConcentration : 5 - 20 % CAS number : 108-94-1  
Symbol : Xn R : 10-20BUTYLGLYCOL ACETATEConcentration : 1 - 15 % CAS number : 112-07-2  
Symbol : Xn R : 20/21

All shades except for 070, 073, 270 and 273 contain additionally:

SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.Concentration : 5 - 10 % CAS number : 64742-95-6  
Symbol : Xn N R : 65-10-37-51/53

All shades except for 170 and 182 contain additionally:

BUTYLGLYCOLATEConcentration : 1 - 5 % CAS number : 7397-62-8  
Symbol : Xi R : 41

Ink shades 182, 191 and 193 contain additionally:

NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVYConcentration : 1 - 5 % CAS number : 64742-82-1  
Symbol : Xn N R : 10-65-51/53**03. Hazards identification**Hazard designation

Irritant

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Particular information pertaining specific risk for human and environment

The product is water polluting

Irritating to eyes

04. First aid measures

General

immediately remove all contaminated clothing  
In all cases of doubt, or when symptoms persist, seek medical attention.  
unconsciousness: lateral position - call a physician

Inhalation

Take the casualty into the fresh air and keep warm  
irregular breathing/no breathing: artificial respiration  
call a physician

Skin contact

wash away with soap and water and rinse  
Do NOT use solvents or thinners.

Eye contact

Flush with plenty of water (10 - 15 min.)  
call a physician

Ingestion

Call a doctor  
Keep at rest.  
do not induce vomiting

05. Fire-fighting measures

Extinguishing media - suitable

Carbon dioxide, foam, sand, dry extinguishing agent

Extinguishing media - NOT suitable

Waterjet should not be used because water is not mixable with a lot of organic solvents and such solvents will spread on the water surface.

Special risk posed by the substance or by the actual preparation, its combustion products or gases discharged

In case of fire, dangerous smoke gases such as carbon dioxide, carbon monoxide, soot, nitrogen oxides, metal oxides and halogenated hydrogens can be produced.

Therefore, take suitable precautionary measures for fire fighting. Residues remaining after a fire have to be disposed of appropriately.

Protective equipment

Breathing apparatus with an independent source of air may be required.

Additional information

cool endangered containers with water in case of fire

06. Accidental release measures

Personal precautions

Keep away from sources of ignition. Provide for good ventilation. Do not breathe vapours.

Refer to protective measures listed in sections 7 and 8.

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**Environmental precautions**

do not empty into drains  
If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

**Methods for cleaning up/collecting**

Remove by liquid absorbing material (e.g. kieselguhr) and process according to waste regulations.  
Clean preferably with a detergent; avoid use of solvents.

**07. Handling and storage**

**Information for safe handling**

Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limit. Do not leave containers open. The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Avoid contact with skin and eyes. Avoid inhalation of vapour and spray mist. When using do not eat, drink or smoke.  
Comply with the health and safety at work laws.

**Information about protection against explosions and fires**

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.  
Preparation may charge electrostatically: always use earthing leads when transferring from one container to another.  
Operators should wear antistatic footwear and clothing. No sparking tools should be used.

**Requirements to be met by storerooms and containers**

Recommended storage temperature: 15-20°C.  
Keep container tightly closed. Never use pressure to empty: container is not a pressure vessel. No smoking. Prevent unauthorized access.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**Information about separation of incompatible products**

Keep away from oxidizing agents, from strongly alkaline and strongly acid materials.

**Further information about storage conditions**

Always keep in containers of same material as the original one. See also instructions on the label. Avoid heating and direct sunlight.  
Keep containers dry and cool  
Keep away from sources of ignition.

**08. Exposure controls and personal protection**

**Additional information about engineering measures**

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

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Components with critical values that require monitoring at the workplace (exposure limits)

**4-HYDROXY-4-METHYLPENTAN-2-ONE** CAS : 123-42-2  
 Specification : Short Term Exposure Limit (STEL)  
 Nation : GB  
 Value : 75,0000 ppm / 362,0000 mg/m3  
 Valid as per (mm/yy) : 08 / 97  
 Specification : Long Term Exposure Limit (LTEL)  
 Nation : GB  
 Value : 50,0000 ppm / 241,0000 mg/m3  
 Valid as per (mm/yy) : 08 / 97

**CYCLOHEXANONE** CAS : 108-94-1  
 Specification : Short Term Exposure Limit (STEL)  
 Nation : GB  
 Value : 100,0000 ppm / 408,0000 mg/m3  
 Valid as per (mm/yy) : 08 / 97  
 Specification : Long Term Exposure Limit (LTEL)  
 Nation : GB  
 Value : 25,0000 ppm / 102,0000 mg/m3  
 Valid as per (mm/yy) : 08 / 97

All shades except for 070, 073, 270 and 273 contain additionally:

**AROMATICS**

Specification : Long Term Exposure Limit (LTEL)  
 Nation : GB  
 Value : 500,0000 mg/m3  
 Valid as per (mm/yy) : 08 / 97

**1,2,4-TRIMETHYLBENZENE**

CAS : 95-63-6

Specification : Long Term Exposure Limit (LTEL)  
 Nation : GB  
 Value : 25,0000 ppm / 125,0000 mg/m3  
 Valid as per (mm/yy) : 08 / 97

Ink shades 182, 191 and 193 contain additionally:

**NORMAL AND BRANCHED CHAIN ALKANES, 2C7**

Specification : Long Term Exposure Limit (LTEL)  
 Nation : GB  
 Value : 1200,0000 mg/m3  
 Valid as per (mm/yy) : 08 / 97

Personal protective equipment

General protective and hygiene measures

The usual precautionary measures for the handling of chemicals have to be observed.

Respiratory equipment

Breathing protection equipment required in inadequately ventilated places and during spraying.

Respiratory filter (gas) : A

Respiratory filter (part): P2

Skin protection

use protective gloves

Eye protection

use safety glasses

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**Body protection**

Personal should wear antistatic clothings made of natural fiber or of high temperature resistant synthetic fiber. All parts of the body should be washed after contact.  
Use re-greasing skin cream.

**09. Physical and chemical properties****Image**

Form : pasty  
Colour : see trade name  
Odour : characteristic

**Relevant safety data****Change in condition**

Boiling point (initial)

Flashpoint : 150 °C

Ignition temperature : 49 °C

Explosive limits : 375 °C

Lower / Upper :

Vapor pressure : ( 50 °C ) < 0,7 Volt / 9,4 Volt

( 20 °C ) 1000 hPa

( 20 °C ) 7 hPa

Solubility in water : parts of 1,0-1,8 g/cm<sup>3</sup>

solvents

Viscosity :

Flow time:

20 °C

150 s

DIN-cup 4 mm

**Additional information**

the physical specifications are approximate values and refer to the used safety relevant component(s).

**10. Stability and reactivity****Conditions to avoid**

Stable under recommended storage and handling conditions (See section 7).

**Materials to avoid**

Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

**Dangerous decomposition products**

When exposed to high temperatures, dangerous decomposition products such as carbon dioxide, carbon monoxide, soot, nitrogen oxides, metal oxides and halogenated hydrocarbons can be produced.

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11. Toxicological information

Experience on practice:

Inhalation can cause headaches, dizziness, tiredness and nausea. Prolonged or repeated inhalation may affect the nervous system and cause kidney and liver complaints.

Danger of absorption by the skin. Irritates and dries the skin. Repeated contact with the skin may lead to inflammation.

Splashes in the eyes have an irritant effect. Prolonged contact with the eyes may lead to corneal opacity.

If swallowed, stomach complaints and irritation of the digestive organs may result.

Additional toxicological information

There are no data available on the preparation itself

The product was classified in toxicological terms on the basis of the results of the calculation procedure outlined within General Directive on Preparations (88/37/EEC).

12. Ecological information

Details on elimination (persistence / degradability)

There are no data available on the preparation itself.

Additional ecological information

Do not empty into waters or drains

13. Disposal considerations

Product

Recommendation

Dispose of or incinerate in accordance with corresponding regulations.

Contaminated packaging

Recommendation

Uncleaned packaging must be disposed of in the same manner as the medium.

Contaminated packaging must be emptied of all residues and, following appropriate cleaning, may be sent to a recycling plant.

14. Transport information

Land transport ADR/RID and GGVS/GGVE

Classification

Class 3, number 31c. Containers with a capacity  $\leq$  450 l are subject only to the regulations of Rn 2314 (remarks under E of Rn 2301).

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Maritime transport IMDG/GGVSea

## Classification

IMDG-Code	:	3.3	IMDG-Page	:	3372
UN-number	:	1263	MARPOL	:	--
MFAG-Table	:	310	EmS number	:	3-05

## Technical name

PAINT

## Substance releasing the danger

CYCLOHEXANONE

DIACETONE ALCOHOL

## Packaging

Packaging group III

Tremcard

3

Air transport ICAO-TI and IATA-DGR

## Classification

ICAO/IATA Class	:	3
UN-number	:	1263

## Technical name

PAINT

## Substance releasing the danger

CYCLOHEXANONE

4-HYDROXY-4-METHYLPENTAN-2-ONE

## Packaging

Packaging group III

Tremcard

3

15. Regulatory informationClassification according to EEC directives

## Danger symbol and danger designation

Xi Irritant

## Risk-phrases

10	Flammable
36	Irritating to eyes

## Safety-phrases

20/21	When using do not eat, drink or smoke
24/25	Avoid contact with skin and eyes
26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
29	Do not empty into drains
51	Use only in well-ventilated areas.

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**16. Other information**

According to their chemical structure, the applied raw materials do not contain any antimony, arsenic, soluble barium, lead, cadmium, chromium, mercury and selenium.

**Department issuing data specification sheet:**

Laboratory/product safety

**Contact**

Dipl.-Chem. G.Heller or Dipl.-Ing. U.Voetter

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The instructions are based on today's information and knowledge. The safety data sheet describes products in relation to safety requirements. These instructions do not assure application technological properties of the product.

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**Material Safety Data Sheet (Appendix) according to 91/155/EC**

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Important changes have been made in the chapters listed hereunder  
in connection with safety, protection to health or environment:

- 02. Hazardous components
- 08. Components with critical values that require monitoring at the  
workplace (exposure limits)
- 14. Land transport ADR/RID and GGVS/GGVE
- 14. Maritime transport IMDG/GGVSea
- 14. Air transport ICAO-TI and IATA-DGR