



Trade name: Mara® Jet 1 L DI-UR

Version: 5 /

Date revised: 23.09.2015

Substance number: 350397401

Replaces Version: 4 / WORLD

Print date: 16.08.16

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

1.1. Product identifier

Mara® Jet 1 L DI-UR

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

Use of the substance/preparation

Cleaner for digital inks

1.3. Details of the supplier of the safety data sheet

Address

Marabu GmbH & Co. KG
Asperger Strasse 4
71732 Tamm
Germany
Telephone no. +49-7141/691-0
Fax no. +49-7141/691-147
Information provided by / telephone Department product safety
E-mail address of person responsible for this SDS PRSI@marabu.de

1.4. Emergency telephone number

(+49) (0)621-60-43333

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)
Acute Tox. 4 H302
Acute Tox. 4 H312
Acute Tox. 4 H332

2.2. Label elements

Labelling according to regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Warning

Hazard statements

H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264.1 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.



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P304+P340
P312
P330

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor if you feel unwell.
Rinse mouth.

Hazardous component(s) to be indicated on label (Regulation (EC) No. 1272/2008)

contains 2-Butoxyethyl acetate

2.3. Other hazards

No special hazards have to be mentioned.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****Chemical characterization**

Solvent mixture of esters

Hazardous ingredients**2-Butoxyethyl acetate**

CAS No.	112-07-2				
EINECS no.	203-933-3				
Registration no.	01-2119475112-47				
Concentration	>= 93	<	100	%	

Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 4	H332
Acute Tox. 4	H312
Acute Tox. 4	H302

SECTION 4: First aid measures**4.1. Description of first aid measures****General information**

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious place in recovery position and seek medical advice.

After inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

After skin contact

Remove contaminated clothing. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.

After eye contact

Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

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

Until now no symptoms known so far.

4.3. Indication of any immediate medical attention and special treatment needed**Hints for the physician / treatment**

Treat symptomatically



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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Recommended: alcohol resistant foam, CO₂, powders, water spray/mist, Not be used for safety reasons: water jet

5.2. Special hazards arising from the substance or mixture

In the event of fire the following can be released: Carbon dioxide (CO₂); Carbon monoxide (CO); dense black smoke

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Cool closed containers exposed to fire with water. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Exclude sources of ignition and ventilate the area. Avoid breathing vapours. Refer to protective measures listed in Sections 7 and 8.

6.2. Environmental precautions

Do not allow to enter drains or waterways. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13). Clean preferably with a detergent - avoid use of solvents.

6.4. Reference to other sections

Information regarding Safe handling, see Section 7. Information regarding personal protective measures, see Section 8. Information regarding waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear anti-static footwear and clothing and floors should be of the conducting type. Isolate from sources of heat, sparks and open flame. No sparking tools should be used. Avoid skin and eye contact. Avoid the inhalation of particulates and spray mist arising from the application of this mixture. Smoking, eating and drinking shall be prohibited in application area. For personal protection see Section 8. Never use pressure to empty: container is not a pressure vessel. Always keep in containers of same material as the original one. Comply with the health and safety at work laws. Do not allow to enter drains or water courses.

Advice on protection against fire and explosion

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air.

Classification of fires / temperature class / Ignition group / Dust explosion class

Classification of fires

B (Combustible liquid substances)



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Temperature class T3

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Electrical installations/working materials must comply with the local applied technological safety standards. Storage rooms in which filling operations take place must have a conducting floor. Store in accordance with national regulation

Hints on storage assembly

Store away from oxidising agents, from strongly alkaline and strongly acid materials.

Further information on storage conditions

Observe label precautions. Store between 15 and 30 °C in a dry, well ventilated place away from sources of heat and direct sunlight. Keep container tightly closed. Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3. Specific end use(s)

Cleaner for digital inks

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Derived No/Minimal Effect Levels (DNEL/DMEL)

2-Butoxyethyl acetate

Reference substance	2-Butoxyethyl acetate	
Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Route of exposure	dermal	
Mode of action	Acute effects	
Concentration	102	mg/kg
Source	Literature value	

Type of value	2-Butoxyethyl acetate	
	Derived No Effect Level (DNEL)	
Reference group	Worker	
Route of exposure	inhalative	
Mode of action	Acute effects	
Concentration	775	mg/kg
Source	Literature value	

Type of value	2-Butoxyethyl acetate	
	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Route of exposure	dermal	
Mode of action	Acute effects	
Concentration	27	mg/kg
Source	Literature value	

Type of value	2-Butoxyethyl acetate	
	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Route of exposure	inhalative	
Concentration	499	mg/kg
Source	Literature value	

Type of value	2-Butoxyethyl acetate	
	Derived No Effect Level (DNEL)	

Safety data sheet in accordance with regulation (EC) No 1907/2006



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Reference group Consumer
 Route of exposure oral
 Mode of action Acute effects
 Concentration 18 mg/kg
 Source Literature value

Type of value 2-Butoxyethyl acetate
 Derived No Effect Level (DNEL)
 Reference group Consumer
 Route of exposure inhalative
 Mode of action Local effects
 Concentration 166 mg/kg
 Source Literature value

Type of value 2-Butoxyethyl acetate
 Derived No Effect Level (DNEL)
 Reference group Consumer
 Route of exposure dermal
 Mode of action Chronic effects
 Concentration 36 mg/kg
 Source Literature value

Type of value 2-Butoxyethyl acetate
 Derived No Effect Level (DNEL)
 Reference group Consumer
 Route of exposure inhalative
 Mode of action Chronic effects
 Concentration 67 mg/kg
 Source Literature value

Type of value 2-Butoxyethyl acetate
 Derived No Effect Level (DNEL)
 Reference group Consumer
 Route of exposure oral
 Mode of action Chronic effects
 Concentration 4,3 mg/kg
 Source Literature value

Type of value 2-Butoxyethyl acetate
 Derived No Effect Level (DNEL)
 Reference group Worker
 Route of exposure dermal
 Mode of action Chronic effects
 Concentration 102 mg/kg
 Source Literature value

Type of value 2-Butoxyethyl acetate
 Derived No Effect Level (DNEL)
 Reference group Worker
 Route of exposure inhalative
 Mode of action Chronic effects
 Concentration 133 mg/kg
 Source Literature value

Predicted No Effect Concentration (PNEC)

2-Butoxyethyl acetate
 Reference substance 2-Butoxyethyl acetate



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Type of value	PNEC		
Type	Water		
Concentration	0,304		mg/l
Source	Literature value		
Type of value	2-Butoxyethyl acetate		
Type	PNEC		
Concentration	Aquatic		
Source	0,0304		g/l
	Literature value		
Type of value	2-Butoxyethyl acetate		
Type	PNEC		
Concentration	Sediment		
Source	2,03		mg/kg
	Literature value		
Type of value	2-Butoxyethyl acetate		
Type	PNEC		
Concentration	Marine sediment		
Source	0,203		mg/kg
	Literature value		
Type of value	2-Butoxyethyl acetate		
Type	PNEC		
Concentration	Soil		
Source	0,68		mg/kg
	Literature value		

8.2. Exposure controls

Exposure controls

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.

Respiratory protection

If workers are exposed to concentrations above the exposure limit they must use appropriate, certified respirators. Full mask, filter A

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

For prolonged or repeated handling nitrile rubber gloves with textile undergloves are required.

Material thickness > 0,5 mm

Breakthrough time < 30 min

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/ chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred.

Eye protection

Use safety eyewear designed to protect against splash of liquids.



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Body protection

Cotton or cotton/synthetic overalls or coveralls are normally suitable.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Form	Liquid		
Colour	colourless, clear		
Odour	solvent-like		
Odour threshold			
Remarks	No data available		
pH value			
Remarks	Not applicable		
Melting point			
Remarks	not determined		
Freezing point			
Remarks	not determined		
Initial boiling point and boiling range			
Value	appr. 184		°C
Pressure	1.013	hPa	
Source	Literature value		
Flash point			
Value	72		°C
Method	ASTM D 6450 (CCCFP)		
Evaporation rate (ether = 1) :			
Remarks	not determined		
Flammability (solid, gas)			
Not applicable			
Upper/lower flammability or explosive limits			
Lower explosion limit	appr. 0,9		%(V)
Upper explosion limit	appr. 8,5		%(V)
Source	Literature value		
Vapour pressure			
Value	appr. 3		hPa
Temperature	20	°C	
Method	calculated		
Vapour density			
Remarks	not determined		
Density			
Value	0,936		g/cm ³
Temperature	20	°C	
Method	DIN EN ISO 2811		
Solubility in water			
Remarks	partially miscible		
Partition coefficient: n-octanol/water			
Remarks	Not applicable		
Ignition temperature			
Value	appr. 280		°C
Source	Literature value		



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Efflux time

Value	< 12	s
Method	DIN 53211 4 mm	

Explosive properties

evaluation	no
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Oxidising properties

evaluation	None known
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9.2. Other information**Other information**

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

SECTION 10: Stability and reactivity**10.1. Reactivity**

No hazardous reactions when stored and handled according to prescribed instructions.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

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

10.4. Conditions to avoid

When exposed to high temperatures may produce hazardous decomposition products.

10.5. Incompatible materials

No hazardous reactions when stored and handled according to prescribed instructions.

10.6. Hazardous decomposition products

See chapter 5.2 (Firefighting measures - Special hazards arising from the substance or mixture).

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute oral toxicity**

ATE	1.898,81	mg/kg
	73	

Method	calculated value (Regulation (EC) No. 1272/2008)	
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Acute oral toxicity (Components)**2-Butoxyethyl acetate**

Species	rat	
LD50	1880	mg/kg
Method	OECD 401	

Acute dermal toxicity

ATE	1.494,81	mg/kg
	36	

Method	calculated value (Regulation (EC) No. 1272/2008)	
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Acute dermal toxicity (Components)**2-Butoxyethyl acetate**

Species	rabbit	
LD50	1480	mg/kg

Acute inhalational toxicity



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ATE	11,1101	mg/l
Administration/Form	Vapors	
Method	calculated value (Regulation (EC) No. 1272/2008)	
ATE	1,515	mg/l
Administration/Form	Dust/Mist	
Method	calculated value (Regulation (EC) No. 1272/2008)	

Acute inhalative toxicity (Components)**2-Butoxyethyl acetate**

Species	rat	
LD0	2,66	mg/l
Duration of exposure	4	h
Administration/Form	Vapors	
Method	OECD 403	

Aspiration hazard

No special hazards have to be mentioned.

Experience in practice

Exposure to component solvents vapours concentration in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin. The liquid splashed in the eyes may cause irritation and reversible damage. Ingestion may cause nausea, diarrhoea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Other information

There are no data available on the mixture itself.

The mixture has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified for toxicological hazards accordingly.

SECTION 12: Ecological information**12.1. Toxicity****General information**

There are no data available on the mixture itself. Do not allow to enter drains or water courses. The mixture has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is not classified as dangerous for the environment.

Fish toxicity (Components)**2-Butoxyethyl acetate**

Species	golden orfe (Leuciscus idus)	
LC50	80	mg/l
Duration of exposure	48	h

Daphnia toxicity (Components)**2-Butoxyethyl acetate**

Species	Daphnia magna	
EC50	37	mg/l
Duration of exposure	48	h

Algae toxicity (Components)**2-Butoxyethyl acetate**

EC50	> 500	mg/l
Duration of exposure	72	h



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Bacteria toxicity (Components)**2-Butoxyethyl acetate**

Species	Pseudomonas putida	
EC10	720	mg/l
Duration of exposure	17	h
Method	OECD 209	

12.2. Persistence and degradability**General information**

No data available

Biodegradability (Components)**2-Butoxyethyl acetate**

Value	88	%
Duration of test evaluation	28	d
Method	Readily biodegradable (according to OECD criteria) OECD 301 C	

12.3. Bioaccumulative potential**General information**

There are no data available on the mixture itself.

Partition coefficient: n-octanol/water

Remarks Not applicable

12.4. Mobility in soil**General information**

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment**General information**

There are no data available on the mixture itself.

12.6. Other adverse effects**General information**

There are no data available on the mixture itself.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations for the product**

Do not allow to enter drains or water courses.

Wastes and emptied containers should be classified in accordance with relevant national regulation.

The European Waste Catalogue classification of this product, when disposed of as waste is

EWC waste code 08 03 12* waste ink containing dangerous substances

If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned.

For further information contact your local waste authority.

Disposal recommendations for packaging

Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers.

Empty containers must be scrapped or reconditioned.

Not emptied containers are hazardous waste (waste code number 150110).

SECTION 14: Transport information



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Land transport ADR/RID

Non-dangerous goods

14.1. UN number

UN -

14.2. UN proper shipping name

-

14.3. Transport hazard class(es)

Class -

Label -

14.4. Packing group

Packing group -

Transport category 0

14.5. Environmental hazards

-

Marine transport IMDG/GGVSee

The product does not constitute a hazardous substance in sea transport.

14.1. UN number

UN -

14.2. UN proper shipping name

-

14.3. Transport hazard class(es)

Class -

Subsidiary risk -

14.4. Packing group

Packing group -

14.5. Environmental hazards

no

Air transport ICAO/IATA

The product does not constitute a hazardous substance in air transport.

14.1. UN number

UN -

14.2. UN proper shipping name

-

14.3. Transport hazard class(es)

Class -

Subsidiary risk -

14.4. Packing group

Packing group -

14.5. Environmental hazards

-

Information for all modes of transport

14.6. Special precautions for user

Transport within the user's premises:

Always transport in closed containers that are upright and secure.

Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Other information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

no

SECTION 15: Regulatory information

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



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Other information

The product does not contain substances of very high concern (SVHC).

Other information

All components are contained in the TSCA inventory or exempted.

All components are contained in the AICS inventory.

All components are contained in the PICCS inventory.

All components are contained in the DSL inventory.

All components are contained in the IECSC inventory.

All components are contained in the ENCS inventory.

All components are contained in the ECL inventory.

All components are contained in the NZIOC inventory.

15.2. Chemical safety assessment

For this preparation a chemical safety assessment has not been carried out.

SECTION 16: Other information

Hazard statements listed in Chapter 3

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.

CLP categories listed in Chapter 3

Acute Tox. 4	Acute toxicity, Category 4
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Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: ***

This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.

The information in this Safety Data Sheet is based on the present state of knowledge and current legislation.

It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions.

As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation.