Marabu

MATERIAL SAFETY DATA SHEET

FOR PRINTING INK AND
RELATED MATERIALS
Information on this Form is proprietary
Information and furnished solely for the
Use of our Customers

Screen Printing Ink
Quick Identifier

MARASTAR SR
(without Shades
291-293)

HAZARD RATINGS		HEALTH	1
Minimal	0	FLAMMABILITY	2
Slight	1		
Moderate	2	REACTIVITY	0
Serious	3		
Severe	4		

Personal Protection SC

S E C T I O N I

MANUFACTURER'S NAME:	Marabuwerke GmbH & Co.
ADDRESS:	Asperger Str. 4
CITY, STATE and ZIP:	D-71732 Tamm/Germany
EMERGENCY TELEPHONE No.:	800-424-9300 (within the USA and Canada)
OTHER INFORMATION CALLS:	01149-7141-691-0 (phone from USA and Canada)
DATE PREPARED:	23.08.1999
SIGNATURE OF PERSON RESPON-SIBLE FOR PREPARATION (optional)	Dipl. Chem. Gabriele Heller

S E C T I O N II H A Z A R D O U S I N G R E D I E N T S

HAZARDOUS COMPONENT(S) (chemical and common name(s))	OSHA PELs TWA	OSHA PELs STEL/CEIL	ACGIH TLVs TWA	ACGIH TLVs STEL/CEIL	% (optional)	CAS No.
4-Hydroxy-4-methyl-2-pentanone	50 ppm	n.e.	50 ppm	n.e.	10 - 45	123-42-2
Cyclohexanone (skin)	50 ppm	n.e.	25 ppm	n.e.	5 - 20	108-94-1
2-Butoxyethyl acetate	n.e.	n.e.	n.e.	n.e.	1 - 15	112-07-2
<u>Shades 170-193, 636-659, 721, 726, 731, 735 and 829-868 contain aditionally:</u>						
Aromatic hydrocarbons (C_9-C_{10})	n.e.	n.e.	n.e.	n.e.	1 - 10	64742-95-6
contains: 45% Trimethyl benzene	n.e.	n.e.	25 ppm	n.e.		25551-13-7
<u>All shades except for 170 and 182 contain aditionally:</u>						
Butylglycolate	n.e.	n.e.	n.e.	n.e.	1 - 5	7397-62-8
<u>Shades 520-568 contain aditionally:</u>						
Xylene (mixed isomers)	100 ppm	n.e.	100 ppm	150 ppm	1 - 5	1330-20-7
<u>Shades 182, 191 and 193 contain aditionally:</u>						
Aliphatic hydrocarbons (C_9-C_{12})	n.e.	n.e.	n.e.	n.e.	1 - 5	64742-82-1
<u>Shade 520 contains aditionally:</u>						
3-Methoxy-n-butylacetate	n.e.	n.e.	n.e.	n.e.	1 - 5	4435-53-4

(skin)= Danger of Cutaneous Absorption

SECTION III PHYSICAL & CHEMICAL CHARACTERISTICS

BOILING POINT	150 °C
SPECIFIC GRAVITY (H_2O = 1)	1,0 - 1,8 depending on shade
VAPOR PRESSURE (mm Hg)	7
VAPOR DENSITY (Air = 1)	heavier than air
VOLATILE ORGANIC COMPOUNDS	490-710 g/l depending on shade
SOLUBILITY IN WATER	appreciable (parts of solvents)
APPEARANCE and ODOR	pastous ink, characteristic odor
MELTING POINT	n.a.

SECTION IV FIRE & EXPLOSION DATA

FLASH POINT	49 °C		METHOD USED	closed cup
FLAMMABLE LIMITS in Air % by Vol.	LEL	0,7	UEL	9,4
AUTO-IGNITION TEMPERATURE	375 °C			
EXTINGUISHER MEDIA	foam, carbon dioxide, chemical powder, sand			
SPECIAL FIRE FIGHTING PROCEDURES	Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. Water is not mixable with a lot of organic solvents and such solvents will spread on the water surface. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up due to extreme heat.			
UNUSUAL FIRE AND EXPLOSION HAZARDS	Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Avoid heat, open flames, static electricity, electrical equipment and sparks. Preparation may charge electrostatically: always use earthing leads when transferring from one container to another. Keep container tightly closed. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions.			

SECTION V PHYSICAL HAZARDS (REACTIVITY DATA)

STABILITY	UNSTABLE STABLE	O X	CONDITIONS TO AVOID	high temperatures
INCOMPATIBILTY (Materials to avoid)	strong acids, alkalies or oxidizers			
HAZARDOUS DECOMPOSITION PRODUCTS	None, provided the ink is adequately stored and handled. In case of fire, mainly carbon dioxide, carbon monoxide, soot, nitrogen oxides, metal oxides and halogenated hydrogens may be formed.			

HAZARDOUS POLYMERISATION	MAY OCCUR	O	CONDITIONS
	WILL NOT OCCUR	X	TO AVOID

SECTION VI HEALTH HAZARDS

1. ACUTE	irritant	2. CHRONIC
SIGNS and SYMPTOMS of EXPOSURE		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. Dries the skin. Repeated contact with the skin may lead to inflammation. Irritating to eyes. Vapors and the liquid itself will irritate the eyes. Prolonged contact with the eyes may lead to corneal opacity. If swallowed, stomach complaints and irritation of the digestive organs may result.
REACTIVITY IN WATER		none
MEDICAL CONDITIONS GENERALLY AGGRAVATED by EXPOSURE		none are known
CARCINOGENITY		NATIONAL TOXICOLOGY PROGRAM: No I.A.R.C. MONOGRAPHS: 3 *(1,2)* OSHA: No EPA: D *(2)* *(1)* Component Cyclohexanone *(2)* Component Xylene
EMERGENCY and FIRST AID PROCEDURES		Take off all contaminated clothes. In all cases of doubt, or when symptoms persist, seek medical attention.
ROUTES OF ENTRY	1. Inhalation	Remove to fresh air and keep warm. If breathing is difficult: artificial respiration. Call for a physician.
	2. Eyes	Rinse immediately with plenty of water. Take to a physician for medical treatment.
	3. Skin	Wash immediately with plenty of water and soap.
	4. Ingestion	Seek medical advice immediately. Do not induce vomiting.

SECTION VII SPECIAL PRECAUTIONS AND SPILL / LEAK PROCEDURES

PRECAUTIONS to be TAKEN in HANDLING and STORAGE	FOR INDUSTRIAL USE ONLY! Use only in well ventilated areas. Keep away from sources of ignition. Prevent the creation of flammable or explosive concentrations of vapor in air. Avoid vapor concentration higher than the occupational exposure limit. Keep container tightly closed. When using do not eat, drink or smoke. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains.

STEPS to be TAKEN in CASE MATERIAL is RELEASED or SPILLED	Remove sources of ignition. Ventilate area. Do not breathe vapors. Remove by using suitable inert liquid absorbing material, e.g. kieselgur. Clean preferabily with a detergent, avoid use of solvents.
WASTE DISPOSAL METHODS	Dispose of or incinerate in accordance with local, state and federal regulations.

S E C T I O N V I I I S P E C I A L P R O T E C T I O N INFORMATION / C O N T R O L M E A S U R E S

RESPIRATORY PROTECTION (SPECIFIC TYPE)	If TLV or PEL of one hazardous component is exceeded, use approved respirators for organic vapors or approved self contained breathing apparatus. Its use must be in compliance with all OSHA health and fit testing requirements. Use respiratory protection when spray painting.

VENTILATION	LOCAL EXHAUST	Yes	MECHANICAL (GENERAL)	Yes	SPECIAL OTHER

Use and store with adequate ventilation, sufficient to keep exposure below current PELs or TLV limits.

PROTECTIVE GLOVES	use when contact may occur	EYE PROTECTION	use safety-goggles when contact may occur
OTHER PROTECTIVE CLOTHING or EQUIPMENT	use apron if necessary to prevent skin contact		
WORK/HYGIENIC PRACTICES	When using do not eat, drink or smoke. Wash hands thoroughly before eating, drinking or using toilet facilities. Use re-greasing skin cream.		

The information contained herein is based on technical data believed to be reliable. However, since the conditions under which this information may be applied are beyond our control, we can assume no liability for results of its application. This information should be used only by persons having sufficient technical skill to make informed judgements regarding its application.

A D D E N D U M

S A R A T I T L E I I I S E C T I O N 3 1 3 SUPPLIER NOTIFICATION

The purpose of this addendum is to identify ingredients in this product that are chemical subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372. We as a supplier, are required to report this information to you on an annual basis with your first order of each product for the year.

Listed below are the chemicals in this product that are subject to reporting under Section 313. The CAS number and weight percent follow the compound name.

SHADE	SECTION 313 CHEMICAL	CAS-NO.	%
020-170	none		
172	1,2,4-Trimethylbenzene	95-63-6	2,0
173	1,2,4-Trimethylbenzene	95-63-6	1,2
182	none		
191	1,2,4-Trimethylbenzene	95-63-6	2,3
193	1,2,4-Trimethylbenzene	95-63-6	1,9

SHADE	SECTION 313 CHEMICAL	CAS-NO.	%
270-273	none		
520	Xylene (mixed isomers)	1330-20-7	1,6
536	Xylene (mixed isomers)	1330-20-7	1,6
552	Xylene (mixed isomers)	1330-20-7	1,6
568	Xylene (mixed isomers)	1330-20-7	1,6
636	Xylene (mixed isomers)	1330-20-7	1,3
651-659	none		
720	none		
721	1,2,4-Trimethylbenzene	95-63-6	1,2
722	none		
726	1,2,4-Trimethylbenzene	95-63-6	1,2
731	1,2,4-Trimethylbenzene	95-63-6	1,2
732	none		
735	1,2,4-Trimethylbenzene	95-63-6	1,2
764	none		
829	1,2,4-Trimethylbenzene	95-63-6	1,2
832-868	none		