

SAFETY DATA SHEET

According to 1907/2006/EG (REACH)

TM-BH

Date of issue / revised : 26-05-2008

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1.	IDENTIFICATION OF SUBSTANCE, PREPARATION AND COMPANY				
	TRADE NAME	TM-BH			
	INTENDED USE	HARDENER FOR 2-COMPONENT PAD PRINTING INKS			
	SUPPLIER	MEDIA SERVICE GRULMS GMBH			
	INFORMATION	RHEINHORSTSTRASSE 1-3, D-67071 LUDWIGSHAFEN, GERMANY TEL ++49 (0)621 150328-0 FAX ++49 (0)621 150328-99 E-Mail info@grulms.de			
	EMERGENCY INFORMATION	TELEPHONE NUMBER ++1 (703) 527-3887 (Chemtrec)			
2.	HAZARDS IDENTIFICATION				
	DANGER SIGN	XN, HARMFUL			
	SPECIAL DANGER ADVICE FOR PERSONS AND ENVIRONMENT	Flammable; May cause sensitization by skin contact; Harmful by inhalation and in contact with skin			
3.	COMPOSITION / INFORMATION ON INGREDIENTS				
	3.1 CHEMICAL CHARACTERISTICS OF PRODUCT: AROMATIC ISOCYANATE IN SOLVENTS				
	3.2 SUBSTANCES PRESENTING A HEALTH HAZARD WITHIN THE MEANING OF GUIDE-LINES No.67/548/EC OR ASSIGNED OCCUPATIONAL EXPOSURE LIMITS				
	CAS-No..	DESIGNATION ACCORDING TO EC GUIDE-LINES	CONCENTRATION WEIGHT-%	DANGERSYMBOL LETTER	R-PHRASES (*)
	--	AROMATIC POLYISOCYANATE	65-67	XI	43
	100-41-4	ETHYLBENZOL	2-4	XN F	11-20
	1330-20-7	XYLENE	12-14	XN	10-20/21-38
	108-65-6	2-METHOXY-1-PROPYLENEACETATE	16-18	XI	10-36
	26471-62-5	2,4-/2,6-DIISOCYANAT-TOLUENE	< 0,5	T	23-36/37/38-42
	(*) CLEAR TEXT OF R-PHRASES SEE SECTION 15 AND 16				
4.	FIRST AID MEASURES				
	GENERAL	In all cases of doubt or if symptoms persist, take medical advice. Never give anything by mouth to an unconscious person; call a physician. Immediately remove all contaminated clothing.			
	INHALATION	Remove to fresh air, keep the patient warm and at rest. If breathing has stopped, administer artificial respiration. Give nothing by mouth. If unconscious, place in the recovery position and seek medical advice.			
	SKIN CONTACT	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a proprietary skin cleaner. DO NOT USE SOLVENTS OR THINNER.			
	EYE CONTACT	Contact lenses should be removed. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart, and seek medical advice.			
	INGESTION	If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.			
5.	FIRE FIGHTING MEASURES				
	EXTINGUISHING MEDIA RECOMMENDED	Alcohol resistant foam, CO ₂ , powder, water spray/mist			
	EXTINGUISHING MEDIA NOT SUITABLE	Waterjet, exothermic reaction with water possible			
	SPECIAL PROTECTION RECOMMENDATIONS	Appropriate breathing apparatus may be required Fire will produce dense black smoke containing hazardous products of combustion (see Section 10). Decomposition products may be a hazard to health. Appropriate self-contained breathing apparatus may be required. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.			

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6.	ACCIDENTAL RELEASE MEASURES
	<p>PERSONAL PRECAUTIONS Exclude sources of ignition and ventilate the area. Exclude non-essential personnel. Avoid breathing vapours. Refer to protective measures listed in Sections 7 and 8.</p> <p>ENVIRONMENTAL PRECAUTIONS Do not allow to enter drains or water courses. If the product contaminates rivers, lakes and drains or soil, inform the responsible local authorities.</p> <p>METHODS FOR CLEANING UP / COLLECTING Contain and collect spillages with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in a suitable container. The contaminated area should be cleaned up immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises: Water (45 parts by volume)/ethanol or isopropanol (50 parts)/conc. (d:0.880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts)/water (95 parts). Add the same decontaminant to any residues and allow to stand for several days in a non-sealed container until no further reaction occurs. Once this stage is reached, close the container and dispose of in accordance with the waste regulations (see Section 13). Do not allow to enter drains or water courses.</p>
7.	HANDLING AND STORAGE
	<p>HANDLING</p> <p>INFORMATION FOR SAFE HANDLING Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations exceeding the occupational exposure limits. Moreover, the product should only be used in areas which have been cleared from direct light, fire and other sources of ignition. The product may charge itself electro-statically. Electrical equipment should be protected properly. When pouring the product into other containers, only ground mains should be used. It is recommended to wear antistatic clothing and foot wear. Use spark-proof tools. Avoid any contact with eyes or skin. Smoking, eating and drinking should be prohibited in areas of storage and use. For personal protection see Section 8. Follow legal protective and safety instructions.</p> <p>INFORMATION ABOUT PROTECTION AGAINST EXPLOSIONS AND FIRES Vapours are heavier than air and may spread along floors. They may form explosive mixtures in combination with air. Preparations may charge electrostatically: Always use earthing leads when transferring from one container to another.</p> <p>STORAGE</p> <p>REQUIREMENTS FOR STORAGE ROOMS AND CONTAINERS Electrical equipment should be protected to the appropriate standard. Floors should be of the conducting type. 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. No ressurized container.</p> <p>ADVICE FOR COMBINED STORAGE Store separately from strong acid and alkaline materials as well as from oxidizing agents, amines, alcohols and water.</p> <p>FURTHER ADVICE FOR STORAGE Store at a cool and well ventilated place. Avoid heating and direct sunlight. Keep away from flammable matters and observe instructions on the labels. Always keep in containers of same material as the original one.</p>
8.	EXPOSURE CONTROL / PERSONEL PROTECTION
	<p>ENGINEERING MEASURES</p> <p>Provide adequate ventilation. Where reasonably practicable this should be achieved by use of local exhaust ventilation and good general extration. If these are not sufficient to maintain concentrations of particulates and/or solvent vapours below the relevant occupational exposure limits, suitable respiratory protective equipment should be worn. (See 'Personal protection' below).</p>

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COMPONENTS WITH CRITICAL VALUES THAT REQUIRE MONITORING AT THE WORKPLACE (EXPOSURE LIMITS)			
CAS-No.	DESIGNATION ACCORDING TO EC GUIDE-LINES	OCCUPATIONAL EXPOSURE LIMITS	UNIT
1330-20-7	XYLENE	100	ppm
108-65-6	2-METHOXY-1-PROPYLENEACETATE	50	ppm
26471-62-5	2,4-/2,6-DIISOCYANAT-TOLUENE	0,01	ppm
100-41-4	ETHYLBENZOL	100	ppm
--	AROMATIC POLYISOCYANATE	--	--
The above values have been taken from the valid list (f.e. TRGS 900) of the Federal Republic of Germany or from the Regulations of SUVA/Switzerland regarding occupational exposure limits.			
PERSONAL PROTECTION			
RESPIRATORY PROTECTION If the solvent vapour concentration exceed the exposure limits, the use of breathing apparatus is practical or necessary (breathing protection measures)			
SKIN PROTECTION Use protective gloves, e.g. Neoprene. At lasting or repeated contact of the product with the skin, use protecting emulsions. Observe recommendations of the manufacturer. After washing hands replace lost skin fat by fat containing skin creams			
EYE PROTECTION Safety glasses as protection against splashes of solvents should be worn.			
BODY PROTECTION Cotton or cotton/synthetic overalls or coveralls are normally suitable. Personal should wear antistatic clothings made of natural fiber or of high temperature resistant synthetic fiber. All parts of body should be washed after contact.			
9. PHYSICAL AND CHEMICAL PROPERTIES			
Form	liquide		
Color	transparent, light yellow		
Odour	like solvents		
	Value	Unit	Method
Boiling point	> 145	°C	
Flash point	app.40	°C	Abel-Pensky
Viscosity	395	s (23°C)	DIN 53211
Density	1,135	g/cm ³ (23°C)	
pH-Value	n.a.		
Content of solvent	< 35	Weight-%	
Explosion limit	Lower 1,2		Upper 9,0 Vol.-% (solvent)
Solubility in water	Reaction with water at 23 °C		
10. STABILITY AND REACTIVITY			
STABILITY	Stable under the recommended storage and handling conditions (see Section 7).		
CONDITIONS TO AVOID	Keep away from oxidising agents and strongly alkaline and strongly acids to prevent the possibility of exothermic reaction. Uncontrolled exothermic reactions occur with amines and alcohols. The product reacts slowly with water resulting in evolution of carbonic dioxide. In closed containers, pressure build up could result in distortion, blowing and in extreme cases bursting of the container.		
DANGEROUS PRODUCTS OF DECOMPOSITION	In a fire, hazardous decomposition products such as smoke, carbon monoxide, carbon dioxide and oxides of nitrogen may be produce.		
11. TOXICOLOGICAL INFORMATION			
There is no data available on the product itself. It is formulated within the SBPIM's guidelines on materials for exclusion from printing inks and varnishes. Exposure to organic solvent vapours may result in adverse health effects such as irritation of the mucous membrane and the respiratory system and adverse effects on the renal and central nervous systems. Symptoms include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases loss of consciousness. Repeated or prolonged contact with the product may lead to removal of natural fats from the skin resulting in non-allergic contact dermatitis and absorption through the skin. Splashes in the eyes may cause irritation and reversible local damage.			

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12. ECOLOGICAL INFORMATION	
There is no data available on the product itself. The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. The Air Pollution Control requirements of regulations made under the Environmental Protection Act may apply to the use of this product.	
13. DISPOSAL CONSIDERATIONS	
WASTE KEYS	VeVA-Code 080501 Country Switzerland Waste key (acc.TA-Abfall) 080501 Country EC
PACKAGING	The container and packaging materials are recyclable according to the local prescriptions and regulations
DO NOT ALLOW INTO DRAINS OR WATER COURSES OR DISPOSE OF WHERE GROUND OR SURFACE WATERS MAY BE AFFECTED. WASTES, INCLUDING EMPTIED CONTAINERS, ARE CONTROLLED WASTES AND SHOULD BE DISPOSED OF IN ACCORDANCE WITH REGULATIONS MADE UNDER THE CONTROL OF POLLUTION ACT AND THE ENVIRONMENTAL PROTECTION ACT.	
14. TRANSPORT INFORMATIONS	
Declarations according to the transport regulations for road (ADR), rail (RID), sea (IMO) and air (ICAO / IATA) transport.	
LAND TRANSPORT	UN Number : 1210 3 (640 E) Transp. Designations: Printing ink related material Package group : III
MARITIME TRANSPORT	UN Number : 1210 IMO-Class 3.3 EmS-Nr. F-E, S-D Transp. Designations Printing ink related material Package group III Warning 3 Marine pollutant no
AIR TRANSPORT	UN Number : 1210 IATA/ICAO-Class 3 Transp.Designations Printing ink related material Package group III
15. REGULATORY INFORMATION	
CLASSIFICATION ACCORDING TO EEC DIRECTIVES	
DANGER SYMBOL	Xn
DANGER DESIGNATION	Harmful
HAZARD DETERMINING	Isocyanates
COMPONENTS OF LABELLING	Xylene (Mixture of Isomeres)
R-PHRASES	10 Flammable 20/21 Harmful by inhalation and in contact with skin 43 May cause senzitation by skin contact
S-PHRASES	20/21 When using don't eat, drink or smoke 24/25 Avoid contact with skin and eyes 51 Use only in well-ventilated areas
CLASSIFICATION ACCORDING TO BAG (SWITZERLAND) AND GERMAN DIRECTIVES	
CH-SZID	See also label
LUFTREINHALTEVERORDNUNG	LRV-class 1 % 2 % 3 < 35 %
IMMISSIONSSCHUTZ	TA-Luft < 35 %
BRANDSCHUTZ	VbF-class N.E. BVD-class N.E.
WASSERHAUSHALT	WGK (self-assessment) 1
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 LEGISLATIONS. THE PROVISION OF THE HEALTH AND SAFETY AT WORK ETC. ACT AND THE CONTROL SUBSTANCES HAZARDOUS TO HEALTH REGULATIONS APPLY TO THE USE OF THIS PRODUCT AT WORK.	

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16.	OTHER INFORMATIONS
	<p>R-Phrases</p> <p>R 11 Highly flammable R 20 Harmful by inhalation R 23 Toxic by inhalation R 36 Irritating to eyes R 38 Irritating to skin R 42 May cause sensitization by inhalation R 43 May cause sensitization by skin contact R 36/37/38 Irritating to eyes, respiratory system and skin</p>
<p>THE INFORMATION CONTAINED IN THIS SAFETY DATA SHEET IS PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CHIP REGULATIONS. 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 IS BASED ON THE PRESENT STATE OF KNOWLEDGE AND CURRENT NATIONAL 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.</p> <p>Information: Media Service Grulms Application Technologies ; Mr. Michael Simon ; simon@grulms.de</p>	