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M A T E R I A L   S A F E T Y   D A T A   S H E E T  
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SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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PRODUCT NAME : BUEHLER VARIDUR LIQUID  
IDENTIFICATION NUMBER: 20-3570, 20-3574, 20-3578  
PRODUCT USE/CLASS : Acrylic blend

SUPPLIER:

Buehler UK, Ltd.	Buehler GmbH
Saturn Building	In der Steele 2, 40599 Düsseldorf
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PREPARER: Technical Department, PHONE: +18472955600,  
PREPARE DATE: 05/20/03; 20 MAY 2003

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SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

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ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT%
01	N,N-dimethyl-para-toluidine Classification: T; R23/24/25-33-52/53	99-97-8	1.0-5.0
02	Trimethylolpropane trimethacrylate ester Classification: N.E.; N.E.	3290-92-4	10.0-30.0
03	Isobutyl methacrylate Classification: Xi, N; R10-36/37/38-43-50	97-86-9	30.0-60.0
04	Dicylopentenloxyethyl methacrylate Classification: No information; N.E.	75662-22-5	10.0-30.0
05	Ethoxylated bisphenol-A dimethacrylate Classification: N.E.; N.E.	41637-38-1	10.0-30.0

----- EXPOSURE LIMITS -----

ITEM	U/K		GERMANY		OTHER	SKIN
	8-HR REL	15-MIN STEL	8-HR MAK	15-MIN MAK	8-HR TWA	
01	N.E.	N.E.	N.E.	N/E	N.E.	NO
02	N.E.	N.E.	N.E.	N/E	N.E.	NO
03	N.E.	N.E.	N.E.	N/E	N.E.	NO
04	N.E.	N.E.	N.E.	N/E	N.E.	NO
05	N.E.	N.E.	N.E.	N/E	N.E.	NO

(See Section 16 for abbreviation legend)

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SECTION 3 - IDENTIFICATION OF HAZARDS

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EMERGENCY OVERVIEW: (R10) Flammable. (R43) May cause sensitization by skin contact. (R20/21/22) Harmful by inhalation, in contact with skin, and if swallowed. (R33) Danger of cumulative effects. (R36/37/38) Irritating to eyes, respiratory system, and skin. (R50) Very toxic to aquatic organisms.

PRIMARY ROUTE(S) OF ENTRY: SKIN CONTACT, SKIN ABSORPTION, INHALATION, EYE CONTACT

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SECTION 4 - FIRST AID MEASURES

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EYE CONTACT: Flush eye with water for 15 minutes. Get medical attention.

SKIN CONTACT: Wash with soap and water. Get medical attention if irritation develops or persists.

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SECTION 4 - FIRST AID MEASURES

INHALATION: If symptoms occur, remove to fresh air. Medical personnel may administer oxygen if breathing is difficult. Seek medical attention if symptoms persist.

INGESTION: If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIAN: Not Applicable.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: 7 C LOWER EXPLOSIVE LIMIT: N.A.  
(SETAFLASH CLOSED CUP) UPPER EXPLOSIVE LIMIT: N.A.  
AUTOIGNITION TEMPERATURE: No data

EXTINGUISHING MEDIA:ALCOHOL FOAM,CO2,DRY CHEMICAL,FOAM,WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors are heavier than air, and may travel along the ground to be reignited at locations distant from the source; flashback of flame may occur. Containers exposed to fire may explode.

SPECIAL FIREFIGHTING PROCEDURES: Treat as petroleum fire.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Reclaim clean material. Remove sources of ignition. Place contaminated material in covered waste container and dispose of in accordance with local and national regulations.

SECTION 7 - HANDLING AND STORAGE

HANDLING: Use only in a well ventilated area. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid contact with eyes, skin, and clothing. FOR INDUSTRIAL USE ONLY.

STORAGE: Keep away from heat, sparks and flame. Keep container closed when not in use.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: General ventilation usually adequate. Supplemental ventilation equipment should be approved for use with flammable vapors.

RESPIRATORY PROTECTION: If exposure levels are unknown, if levels exceed recommended safe exposure limit, or if effects occur, use approved respirator in accordance with regulations and manufacturer's recommendations.

SKIN PROTECTION: Clean clothing to cover skin. Rubber or synthetic gloves.

EYE PROTECTION: Chemical splash goggles.

OTHER PROTECTIVE EQUIPMENT: Eye wash.

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SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

HYGIENIC PRACTICES: Follow good general industrial safety practices during use.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE : 211 - 211 C VAPOR DENSITY : Is heavier than air  
ODOR : Plastic acrylic ODOR THRESHOLD : No data  
APPEARANCE : Clear EVAPORATION RATE: Is slower than Butyl  
SOLUBILITY IN H2O : Negligible Acetate  
FREEZE POINT : No data SPECIFIC GRAVITY: 0.9745  
VAPOR PRESSURE : No data pH @ 0.0 % : N/A  
PHYSICAL STATE : Liquid VISCOSITY : Low  
COEFFICIENT OF WATER/OIL DISTRIBUTION: No data  
(See Section 16 for abbreviation legend)

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY: Strong bases or oxidants.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon. Aromatic and aliphatic hydrocarbons.

HAZARDOUS POLYMERIZATION: Should not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

SECTION 11 - TOXICOLOGICAL PROPERTIES

COMPONENT TOXICOLOGICAL INFORMATION:

CHEMICAL NAME	LD50	LC50
N,N-dimethyl-para-toluidine	No information	No information
Trimethylolpropane trimethacrylate ester	Not Applicable	Not Applicable
Isobutyl methacrylate	Oral-rat 9600mg/kg	ECLo-rat 3600ppm6h
Dicylopentenylxyethyl methacrylate	No information	No information
Ethoxylated bisphenol-A dimethacrylate	No information	No information

Toxicological Test Data: Not Applicable.

ACUTE EFFECTS - EYE CONTACT: Contact may cause injury to eye tissue if not removed promptly.

ACUTE EFFECTS - SKIN CONTACT: Repeated or prolonged contact may cause sensitization. Severe irritant. Prolonged contact may cause chemical burns.

ACUTE EFFECTS - INHALATION: Liquid aspirated into lungs may cause chemical pneumonitis. May cause headaches and dizziness. Causes respiratory tract irritation.

ACUTE EFFECTS - INGESTION: Irritating to mouth, throat and stomach, with nausea. Substance may be harmful if swallowed.

CHRONIC OVEREXPOSURE EFFECTS: Not Applicable.

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SECTION 12 - ECOLOGICAL INFORMATION

ECOLOGICAL TEST DATA: Not Applicable.

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Incineration preferred. This material and/or its container must be disposed of as hazardous waste.

SECTION 14 - TRANSPORTATION INFORMATION

INTERNATIONAL SHIPPING NAME: Resin solution  
INTERNATIONAL ID NUMBER: UN1866  
IMDG CLASS (1°,2°): 3.3, none PACKING GROUP: II  
IMDG EMS: 313 IATA CLASS (1°,2°): 3, none

INTERNATIONAL SHIPPING INFORMATION: Not Applicable.

SECTION 15 - REGULATORY INFORMATION

ChiP SUPPLY LABEL RISK PHRASES: (R10) Flammable. (R20/21/22) Harmful by inhalation, in contact with skin, and if swallowed. (R33) Danger of cumulative effects. (R36/37/38) Irritating to eyes, respiratory system, and skin. (R43) May cause sensitisation by skin contact. (R50) Very toxic to aquatic organisms.

ChiP SUPPLY LABEL SAFETY PHRASES: (S36/37) Wear suitable protective clothing and gloves. (S28) After contact with skin, wash immediately with plenty of water. (S45) In case of accident or if you feel unwell seek medical advice immediately (show the label where possible). (S61) Avoid release to the environment. Refer to special instructions/safety data sheet.

ChiP SUPPLY LABEL SYMBOLS: Harmful, Xn; Dangerous for the Environment, N

SECTION 16 - OTHER INFORMATION

PREVIOUS MSDS REVISION DATE: 04/04/01  
REASON FOR REVISION: update Section(s): 3,14,15

VOLATILE ORGANIC COMPOUNDS (VOCS): 0 grams/ltr (calculated)

LEGEND: N.A. - Not Applicable, N.E. - Not Established,  
N.D. - Not Determined

ABBREVIATIONS: ACGIH = American Conference of Governmental Industrial Hygienists; OSHA = US Occupational Health and Safety Administration; UK = United Kingdom; TLV-TWA = Threshold Limit Value-Time Weighted Average (8 hrs); STEL = Short-Term Exposure Limit (15 min); C = Ceiling Value; PEL = Permissible Exposure Limit

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