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DATE OF LAST CHANGE: 04/05/00 DATE PRINTED.....: 04/05/00

MANUFACTURER'S NAME:

NAZDAR SHAWNEE
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SHAWNEE
KS 66227 USA

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(U.S. and Canada)
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SECTION 1 -- CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT CODE.: RE302

TRADE NAME...: UV REDUCER

PRODUCT CLASS: THINNER

INK SERIES...:

- HMIS CODES -
HEALTH - 2
FLAMMABILITY - 1
REACTIVITY - 1
PPE - X

SECTION 2 -- COMPOSITION, INFORMATION ON INGREDIENTS

CHEMICAL NAME; COMMON NAME; CAS NUMBER	PERCENT BY WEIGHT	OCCUPATIONAL EXPOSURE LIMITS ACGIH TLV	OCCUPATIONAL EXPOSURE LIMITS OSHA PEL	VAPOR PRESSURE IN mmHg	NOTES
ACRYLATES; MIXTURES; CAS #: NOT AVAILABLE	58-62	NOT ESTABLISHED	NOT ESTABLISHED	N/A	
* GLYCOL ETHER ACRYLATE; GLYCOL ETHER COMPOUND CAS #: NOT AVAILABLE	38-42	NOT ESTABLISHED	NOT ESTABLISHED	N/A	(1)

* SUBJECT TO REPORTING REQUIREMENT OF SECTION 313 OF TITLE III OF SARA (40 CFR PART 372).

1) This chemical is included on the list of Hazardous Air Pollutants (HAPs) from Title III of the Clean Air Act Amendments of 1990 (Glycol Ethers Category).
The above glycol ether acrylate is considered a reactive chemical in ultraviolet curable inks. Once initiated by a high dose of ultraviolet light, this glycol ether acrylate rapidly polymerizes (i.e. hardens) and becomes part of the ink film. The polymerization process of UV curable inks is measured in milliseconds.

The recommended permissible exposure limits (PEL) indicated above reflect the levels adopted by OSHA in 1989. Although, some of the 1989 levels have since been vacated, the Nazdar Company recommends that the lower exposure levels be observed as reasonable worker protection.

SECTION 3 -- HAZARDS IDENTIFICATION

GENERAL HEALTH EFFECTS
THE FOLLOWING INFORMATION HAS BEEN DEVELOPED BASED UPON USING THE PRODUCT AS INTENDED BY THE MANUFACTURER. The potential health effects of this product are based on the hazards of its components. The use of this product in combination with other products may produce synergistic (additive) health effects. Cautionary labeling and material safety data sheets of all materials used with this product should be reviewed before use.

EYES
Eye contact with liquid, vapors or mists may cause moderate to severe irritation, including burning, tearing, redness or swelling and reversible eye damage.

SKIN
Skin contact may cause moderate to severe skin injury including reddening and swelling. Repeated and prolonged skin contact may cause blister formation (burns), dermatitis, allergic reaction and/or sensitization. Effects may be delayed and persist for several days. This material may be absorbed through the skin.

INHALATION
Low volatility at room temperature makes vapor inhalation unlikely. Aerosols or vapors which may be generated at elevated processing temperatures may cause respiratory tract irritation. Symptoms may include headaches, nausea, dizziness and intoxication.

INGESTION
Ingestion may cause gastrointestinal tract irritation.

CHRONIC EFFECTS/TARGET ORGANS
No Data Available

ANIMAL STUDIES
No Data Available

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Pregnant women and persons with pre-existing health disorders should consult their physician before using this product. Repeated and prolonged overexposure and/or individual sensitivity may increase the potential for and degree of adverse health effects. See Section 3 "Hazards Identification" for effects of certain hazardous ingredients.

ROUTES OF EXPOSURE
Primary exposure routes: Dermal (Contact/Absorption)- Inhalation-Ingestion Due to the low vapor pressure of this product, minimal volatilization and/or evaporation are expected under normal screen printing conditions.

SECTION 4 -- FIRST AID MEASURES

EYES
After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If irritation persists have eyes examined and tested by medical personnel.

SKIN
In case of contact, immediately wash skin with a mild soap and plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Cool water is initially suggested to prevent the pores of the skin from opening. This will minimize both the area and time of skin contact. Lukewarm water may then be used to ensure all contaminants are removed. Skin should be monitored for reddening or chemical burns. Mild soap is suggested to help prevent abrading the skin or rubbing the chemicals into pores during cleansing. Get medical attention if irritation persists or significant contact has occurred. Thoroughly wash (or discard) clothing and shoes before reuse.

INHALATION
Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention if breathing difficulty is experienced.

INGESTION
If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

OTHER COMMENTS
No Data Available

SECTION 5 -- FIRE FIGHTING MEASURES

FLASH POINT
Greater than 200 Degrees Fahrenheit (PMCC)

OSHA FLAMMABILITY CLASSIFICATION (NFPA)
Class IIIB Combustible Liquid

FLAMMABLE LIMITS (LEL-LOWER EXPLOSIVE LIMIT)
1.4% volume in air

EXTINGUISHING MEDIA
Foam-CO2-Dry Chemical-Water Spray

FIRE AND EXPLOSION HAZARDS
Isolate from heat electrical equipment, sparks, and open flame. Keep containers tightly closed. Exposure to thermal decomposition products may be hazardous. High temperatures and fire conditions may cause rapid and uncontrolled polymerization which can result in explosions and violent rupture of storage containers.

FIRE FIGHTING EQUIPMENT
Full protective equipment including self-contained breathing apparatus (SCBA) is recommended to protect firefighters.

SPECIAL FIRE FIGHTING PROCEDURES
Water may be ineffective but may be used to cool containers. Fumes released on burning may be toxic and dangerous.

SECTION 6 -- ACCIDENTAL RELEASE MEASURES

RELEASE MANAGEMENT MEASURES
Remove all sources of ignition (flames, hot surfaces and electrical, static or frictional sparks). Avoid contact or breathing vapors. Ventilate area. Contain release and remove with inert absorbent. Use non-sparking tools to place material in appropriate container for disposal. The National Response Center (800-424-8802) and local authorities should be contacted for any reportable spill/release.

SECTION 7 -- HANDLING AND STORAGE

ANDLING AND STORAGE METHODS
Store closed containers between 50 and 90 F and away from direct sunlight. Use in a well ventilated area. Follow all MSDS/label precautions even after container is emptied; container may retain product residues. Keep containers closed when not in use. Smoke in designated areas only. Avoid contact with this product. Remove contaminated clothing immediately and wash before reuse. This product may penetrate leather; discard contaminated shoes. Keep out of the reach of children. Follow label directions carefully. Do not take internally. Harmful or fatal if swallowed.

SECTION 8 -- EXPOSURE CONTROLS, PERSONAL PROTECTION

RESPIRATORY PROTECTION
If concentrations of hazardous ingredients exceed exposure limits listed in Section 2 an appropriate NIOSH (National Institute for Occupational Safety and Health) approved respirator with an organic vapor cartridge should be used. If material is handled under mist, spray or dust forming conditions, a P100 (99.97% efficiency) filter should be used in addition to the organic vapor cartridge. If no exposure limits are listed in Section 2, follow general safety guidelines in 29 CFR 1910.134 Respiratory Protection or other applicable respiratory standard.

SKIN PROTECTION
Use neoprene, nitrile or other gloves resistant to chemicals listed in Section 2. Avoid any contact with skin. Gloves should be worn at all times. Contact a reputable safety supply company for appropriate gloves. Solvent resistant aprons are recommended. Prevent prolonged skin contact with contaminated clothing.

EYE PROTECTION
Use ANSI (American National Standards Institute) approved safety glasses, faceshield or splash proof goggles to prevent eye contact. Contact a reputable safety supply company for appropriate eye protection. The availability of an eye wash is highly recommended.

EXPOSURE GUIDELINES
See Section 2 "Composition, Information on Ingredients" for occupational exposure limits.

HYGIENIC PRACTICES
Wash with soap and water before eating, smoking or using toilet facilities. Separately wash or discard clothing and footwear before reuse. NEVER try to remove ink from the skin by using solvent or thinner. Such action is likely to increase the possibility of undesirable effects. Remove contaminated clothing to prevent prolonged skin contact.

ENGINEERING CONTROLS
Use applicable engineering controls, work practices and personal protective equipment to ensure all concentrations are kept below the exposure limits listed in Section 2. Adequate controls should be implemented to ensure employee safety from fine mists which may be produced under some printing conditions.

OTHER PROTECTION
UV EQUIPMENT NOTES: UV reactors used in the curing of this product produce ultraviolet radiation which can cause adverse biological effects. Typical symptoms resemble those of sunburn (skin redness and drying; eye inflammation, pain, tearing, temporary blindness, etc.). Basic exposure controls and personal protective equipment should minimize this hazard. Equipment should be supplied with protective mechanisms and should not be removed. ACGIH and NIOSH have established exposure limits for UV light. These exposure limits are designed to prevent skin and eye effects in most workers. Sensitized individuals may exhibit effects at lower exposures and should be isolated from UV light sources. Ozone is created when UV energy mixes with oxygen. Ozone produced by the equipment lamp should not be inhaled and should be vented outdoors. UV reactors should have ventilation systems installed to safely remove ozone. These systems should be inspected regularly. Consult your equipment supplier for further details.

SECTION 9 -- PHYSICAL AND CHEMICAL PROPERTIES

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APPEARANCE:
Thin liquid

ODOR:
Mild, sweet acrylic

PHYSICAL STATE:
Liquid

pH
Not applicable

VAPOR PRESSURE
See Section 2 for individual ingredients.

VAPOR DENSITY
Heavier than air

_OILING POINT

Greater than 300 degrees Fahrenheit

FREEZING POINT
Not available

SOLUBILITY IN WATER
Not tested

EVAPORATION RATE
Slower than ether

PERCENT VOLATILE BY VOLUME: 0%

WEIGHT PER GALLON: 9.07 lbs/gal

PHOTOCHEMICALLY REACTIVE
No

SECTION 10 -- STABILITY AND REACTIVITY

CHEMICAL STABILITY
Stable

CONDITIONS TO AVOID
High temperature, UV and EB radiation.

INCOMPATIBILITY WITH OTHER MATERIALS
Strong acids/bases, oxidizing/reducing agents and reactive chemicals.

HAZARDOUS DECOMPOSITION PRODUCTS
May produce hazardous fumes when heated to decomposition e.g. carbon monoxide, carbon dioxide and other noxious gases.

HAZARDOUS POLYMERIZATION
Not anticipated during normal printing and storage conditions. May occur if product is exposed to unusually high temperatures (>200 F).

SECTION 11 -- TOXICOLOGICAL INFORMATION

EXPERIMENTAL TOXICITY DATA
Refer to Section 3 Hazards Identification for additional toxicological data.

SECTION 12 -- ECOLOGICAL INFORMATION

ECOTOXICITY
Because this product may be a mixture of chemicals, some of which may be ecologically toxic, it is strongly suggested that it not be disposed of into the environment, i.e. soil, water courses, lakes, landfills, sewers, etc.

ENVIRONMENTAL FATE
No Data Available

SECTION 13 -- DISPOSAL CONSIDERATIONS

DISPOSAL METHODS
Dispose of in accordance with applicable local, county, state, provincial and federal regulations. Emptied containers may retain hazardous properties. Empty containers should be disposed of in an environmentally safe manner in accordance with applicable regulations.

SECTION 14 -- TRANSPORT INFORMATION

TRANSPORT INFORMATION
Not regulated. The product(s) described by this Material Safety Data Sheet do not meet the definition of nor are they classified as a hazardous material/dangerous good as defined by the United States Department of Transportation (DOT), the International Civil Aviation Organization (ICAO), the International Maritime Organization (IMO) or the Canadian Transportation of Dangerous Goods Act (TDG).

SECTION 15 -- REGULATORY INFORMATION

SARA TITLE III 313 INFORMATION
See Section 2 "Composition, Information on Ingredients" for applicable chemicals.

TOXIC SUBSTANCES CONTROL ACT STATUS
All ingredients in Section 2 are listed on the U.S. Environmental Protection Agency's Toxic Substances Control Act (TSCA) Inventory and the Canadian Domestic Substance List.

OTHER REGULATORY INFORMATION
OCCUPATIONAL SAFETY and HEALTH ADMINISTRATION (OSHA) - MSDS is compliant with Occupational Safety and Health Administration Hazard Communication Standard - 29 CFR 1910.1200. AMERICAN NATIONAL STANDARDS INSTITUTE - This MSDS follows the ANSI Z400.1-1993 format. WORKPLACE HAZARDOUS MATERIAL INFORMATION SYSTEM (WHMIS) - This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS CLASSIFICATION (CANADA):
No Data Available

SECTION 16 -- OTHER INFORMATION

DISCLOSURE
The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind express or implied is made with respect to the information contained herein. The data in this MSDS relates only to the specific material designated herein and does not apply to use in combination with any other material or process.

DEFINITIONS

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA: American Industrial Hygiene Association

CEILING: (TLV-Ceiling and PEL Ceiling Limit) The ceiling exposure limit or concentration not to be exceeded for even brief times.

DOT: Department of Transportation

HMIS: The Hazardous Materials Identification System (HMIS) developed by the National Paint and Coatings Association (NPCA) to provide information on the acute health hazards, reactivity and flammability of products encountered in the workplace at room temperatures.

HMIS codes assigned for this product are only suggested ratings based on anticipated normal screen printing applications. The employer has the ultimate responsibility for assigning these ratings and should fully evaluate the MSDS, work practices and environmental conditions prior to assigning the appropriate ratings.

HMIS Personal Protection Index of "X-Ask your supervisor" is given on this MSDS due to varying work conditions which may dictate different levels of protection. Please review this MSDS before determining appropriate protective equipment and beginning work.

IARC: International Agency for Research on Cancer

NFPA: National Fire Protection Association

NTP: National Toxicology Program

STEL: Short-Term Exposure Limit: ACGIH terminology for the short-term exposure limit or maximum concentration for a continuous exposure period of 15 minutes.

TLV: Threshold Limit Value. A term ACGIH uses to express the airborne concentration of a material to which most workers can be exposed during a normal daily and weekly work schedule without adverse effects.

TWA: Time-Weighted Average

VOC: Volatile Organic Compound