



Material Safety Data Sheet

Prepared in accordance with ISO 11014-1/ANSI standard Z400.1-2004

Print Date Oct-16-2008

Revision Date Oct-13-2008

1. PRODUCT AND COMPANY IDENTIFICATION

Product code 1667
Product name Reflex Blue
Product description 1600 PowerPrint® Series UV Screen Ink

Manufacturer or supplier's details

UNITED STATES
Nazdar Company
8501 Hedge Lane Terrace
Shawnee, KS 66227
Tel: 1-913-422-1888
Tel: 1-800-677-4657
Fax: 1-913-422-2294

UNITED KINGDOM
Nazdar Limited
7 Barton Road
Heaton Mersey Industrial Estate
Stockport, Chesire SK4 3EG
Tel: +44 161 442 2111

Emergency Telephone Number

USA: Chemtrec: 1-800-424-9300
Outside USA: Chemtrec: 1-703-527-3887

Website: www.nazdar.com
MSDS Information: 1-913-422-1888 ext 2305
MSDS Contact: Regulatory Compliance
email: regcomp@nazdar.com

2. HAZARDS IDENTIFICATION

This product is a preparation. Health hazard information is based on its components.

Appearance Viscous liquid.
Emergency Overview Irritant. Sensitizer.

Eyes Moderately irritating to the eyes. The liquid splashed in the eyes may cause irritation and reversible damage.

Skin May cause skin irritation and/or dermatitis. Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Moderate skin irritation.

Inhalation Inhalation of vapours is irritating to the respiratory system, may cause throat pain and cough.
Ingestion Ingestion may cause irritation to mucous membranes.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Glycol ether acrylate	Trade Secret	10 - 30
Acrylated Monomer	Trade Secret	10 - 30
Acrylated Monomer	Trade Secret	10 - 30
Titanium dioxide	13463-67-7	1 - 5
C.I. Pigment blue 15:2	12239-87-1	1 - 5
N-vinylcaprolactam	2235-00-9	1 - 5
Triethanolamine	102-71-6	1 - 5
Photoinitiator	Trade Secret	1 - 5
Photoinitiator	Trade Secret	1 - 5

4. FIRST AID MEASURES

Skin Contact May cause allergic skin reaction. In the case of skin irritation or allergic reactions see a physician. Wash off immediately with soap and plenty of water. Use a mild soap if available. Rinse immediately with plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation develops, get medical attention.

Eye Contact May produce an allergic reaction. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention immediately if irritation develops and persists.

Inhalation	Move to fresh air. If breathed in, move person into fresh air. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately.
Ingestion	May produce an allergic reaction. If swallowed, DO NOT induce vomiting. Call a physician or Poison Control Centre immediately. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Flammable Properties	No information available
Suitable Extinguishing Media	Foam. Carbon dioxide (CO ₂). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Protective Equipment and Precautions for Firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Keep away from fire, sparks and heated surfaces. Keep container tightly closed. Cool containers / tanks with water spray. Polymerization is a highly exothermic reaction and may generate sufficient heat to cause thermal decomposition and/or rupture containers. To avoid thermal decomposition, do not overheat. Fire or intense heat may cause violent rupture of packages.
Specific Hazards Arising from the Chemical	May cause sensitization by skin contact. Thermal decomposition can lead to release of irritating gases and vapours. Burning produces obnoxious and toxic fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Remove all sources of ignition. Heat, flames and sparks. Ventilate the area. Avoid breathing dust or vapor. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Methods for Cleaning Up	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Do not use sparking tools.
Environmental Precautions	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

7. HANDLING AND STORAGE

Handling	Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Remove and wash contaminated clothing before re-use. Discard contaminated shoes. When using do not smoke. Take notice of labels and material safety data sheets for the working chemicals. Do not take internally. Harmful or fatal if swallowed.
Storage	Keep at temperatures between 9.9°C and 31.9°C. Keep container closed when not in use. Keep out of the reach of children. Keep away from direct sunlight.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component	Weight %	ACGIH TLV	OSHA PEL	Ontario TWAEV
Titanium dioxide	1 - 5	TWA: 10 mg/m ³	TWA: 10 mg/m ³ TWA: 15 mg/m ³	TWA: 10 mg/m ³
Triethanolamine	1 - 5	TWA: 5 mg/m ³		TWA: 3.1 mg/m ³ TWA: 0.5 ppm

Component	Weight %	NIOSH IDLH	Mexico OEL (TWA)
Titanium dioxide	1 - 5	5000 mg/m ³	TWA: 10 mg/m ³ STEL: 20 mg/m ³

Component	Weight %	NIOSH IDLH	Mexico OEL (TWA)
C.I. Pigment blue 15:2	1 - 5	100 mg/m ³	

NIOSH IDLH: Immediately Dangerous to Life or Health

Engineering Measures

Use only with adequate ventilation. Use ventilation adequate to keep exposures below recommended exposure limits. See MSDS. In case of insufficient ventilation, wear suitable respiratory equipment.

Personal Protective Equipment

Respiratory Protection

Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Respirator with a vapour filter.

Eye Protection

Ensure that eyewash stations and safety showers are close to the workstation location. Avoid contact with eyes. Safety glasses with side-shields. Goggles. Face-shield.

Skin Protection

Wear protective gloves/clothing. Solvent-resistant apron and boots.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice. Ensure that eyewash stations and safety showers are close to the workstation location. Wash hands before eating, drinking, or smoking. Remove and wash contaminated clothing before re-use. Regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Viscous liquid	Physical State	Liquid
Odor	Mild Sweet Acrylic Characteristic	Odor Threshold	No information available
pH	No information available	Autoignition Temperature	No information available
Boiling point/Boiling Range	>149°C / >300°F	Melting Point/Range	No information available
Freezing Point/Range	No information available	Solubility	No information available
Evaporation Rate	No information available	Partition Coefficient (n-octanol/water)	No information available
Vapour Pressure	No information available	Vapour Density	Heavier than air
Flammability (solid, gas)	No information available		
Flammability Limits in Air		Flash Point	> 93°C / > 200°F
Upper	No information available	Method	Pensky Martens Closed Cup (PMCC)
Lower	No information available	Photochemically Reactive	No
Weight Per Gallon (lbs/gal)	9.322	Specific Gravity	No information available
VOC by weight	0	VOC by volume	0
VOC lbs/gal	0	VOC grams/liter	0

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Temperatures above 93°C. Keep away from direct sunlight.
Incompatible Products	Strong acids. Strong bases. Strong oxidizing agents. Reducing agents.
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating gases and vapours. Carbon dioxide (CO ₂). Carbon monoxide.
Possibility of Hazardous Reactions	None under normal processing. Do not store for longer periods at temperatures above 93°C.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Glycol ether acrylate	4660 µL/kg (Rat)	2540 µL/kg (Rabbit)	
Acrylated Monomer	5 g/kg (Rat)	3600 µL/kg (Rabbit)	
Acrylated Monomer	5190 µL/kg (Rat)	5000 mg/kg (Rabbit)	
Titanium dioxide	10000 mg/kg (Rat)		
Triethanolamine	4190 mg/kg (Rat)	2000 mg/kg (Rabbit) 16 mL/kg (Rat)	

Chronic Toxicity

Component	ACGIH	IARC	NTP	OSHA
Titanium dioxide		Group 2B		X

Legend:

IARC: (International Agency for Research on Cancer)
OSHA: (Occupational Safety & Health Administration)

Group 2B - Possibly Carcinogenic to Humans
X - Present

Sensitisation	May cause sensitization of susceptible persons.
Mutagenic Effects	No information available
Reproductive Effects	No information available
Developmental Effects	No information available
Teratogenicity	No information available
Chronic Effects	Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure.
Target Organ Effects	Lungs, Respiratory system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

We have no quantitative data concerning the ecological effects of this product. Environmental fate information is derived from consideration of the properties of the ingredients. Should not be released into the environment.

Component	Freshwater Algae	Freshwater Fish	Water Flea
Triethanolamine	72 Hr EC50 Scenedesmus subspicatus: 216 mg/L; 96 Hr EC50 Scenedesmus subspicatus: 169 mg/L	96 Hr LC50 Pimephales promelas: >1000 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 450-1000 mg/L [static]	24 Hr EC50 Daphnia magna: 1386 mg/L

Persistence and Degradability	No information available
Bioaccumulation	No information available
Mobility in Environmental Media	No information available

Component	log Pow
Triethanolamine	-2.53

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	Dispose of contents/container in accordance with local regulation.
Contaminated Packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

14. TRANSPORT INFORMATION

DOT

Printing Ink, Not Regulated

ICAO/IATA

Not classified as dangerous in the meaning of transport regulations

IMDG/IMO

Not classified as dangerous in the meaning of transport regulations

15. REGULATORY INFORMATION

International Inventories

Listed on TSCA. For further information, please contact: Nazdar email: regcomp@nazdar.com

U.S. Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Glycol ether acrylate	Mixture	10 - 30	1.0
C.I. Pigment blue 15:2	12239-87-1	1 - 5	1.0

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.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following HAPs:

Component	CAS-No	Weight %
Glycol ether acrylate	Mixture	10 - 30

U.S. State Regulations**California Prop. 65**

WARNING! This product contains a chemical known in the State of California to cause cancer. WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Component	CAS-No	Weight %
Toluene	108-88-3	< 0.5
Benzene	71-43-2	< 0.0001

State Right-to-Know

Component	Minnesota	Florida	New Jersey	Pennsylvania	Massachusetts	Rhode Island
Glycol ether acrylate	Not Listed	Not Listed	X	X	Not Listed	Not Listed
Acrylated Monomer	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Acrylated Monomer	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Titanium dioxide	Not Listed	Not Listed	X	X	X	X
C.I. Pigment blue 15:2	Not Listed	Not Listed	X	X	Not Listed	Not Listed
N-vinylcaprolactam	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Triethanolamine	Not Listed	Not Listed	X	X	X	X
Photoinitiator	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Photoinitiator	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed

Canada

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR

Component	WHMIS Classifications of Components
Acrylated Monomer	D2B
Acrylated Monomer	D2B
Titanium dioxide	D2A
Triethanolamine	Uncontrolled product according to WHMIS classification criteria

Component	NPRI - National Pollutant Release Inventory
C.I. Pigment blue 15:2	Part 1, Group 1 Substance
Triethanolamine	Part 4 Substance

REACH: Substances of Very High Concern (SVHC): Article 57 of Regulation (EC) No 1907/2006

Does NOT contain a listed substance

HMIS:	Health	Flammability	Instability	PPE
	2	1	1	X

16. OTHER INFORMATION

Revision Date Oct-13-2008

Revision Summary New MSDS format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of MSDS