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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product code **3667**
Product name **Reflex Blue**
Product category **3600 Series UV Decal Screen Ink**

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Printing operations

Details of the supplier of the safety data sheet

UNITED STATES	UNITED KINGDOM
Nazdar Company	Nazdar Limited
8501 Hedge Lane Terrace	Barton Road
Shawnee, KS 66227	Heaton Mersey
Tel: 1-913-422-1888	Stockport, England SK4 3EG
Tel: 1-800-677-4657	Tel: +44 161 442 2111
Fax: 1-913-422-2294	
www.nazdar.com	

Emergency telephone number

USA: Chemtrec: 1-800-424-9300
Outside USA: Chemtrec: 1-703-527-3887
24 Hour Emergency Phone Number

2. HAZARDS IDENTIFICATION

Classification

Skin Corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Skin sensitization	Category 1B - (H317)
Specific target organ toxicity (repeated exposure)	Category 2 - (H373)

Label elements



Signal Word
Warning

Hazard Statements

H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H373 - May cause damage to organs through prolonged or repeated exposure

P280 - Wear eye protection/ face protection
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray

Hazards not otherwise classified (HNOC)

May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Component	CAS-No	Weight %	Trade Secret	Note
Acrylated Monomer	Trade Secret	10 - 30	*	
Glycol Ether Acrylate	Trade Secret	10 - 30	*	
Vinyl Functional Monomer	Trade Secret	5 - 10	*	
Acrylated Oligomer	Trade Secret	1 - 5	*	
Acrylated Monomer	Trade Secret	1 - 5	*	
Copper Phthalocyanine Compound	Trade Secret	1 - 5	*	
Titanium dioxide	13463-67-7	1 - 5	*	
Triethanolamine	102-71-6	1 - 5	*	
Photoinitiator	Trade Secret	1 - 5	*	
Glycol Ether Acrylate	Trade Secret	1 - 5	*	
Ethyl benzene (constituent)	100-41-4	< 0.5	*	1

*The exact percentage (concentration) of composition has been withheld as a trade secret.

Note 1. Type of chemical: Constituent

4. FIRST AID MEASURES

Description of first aid measures

General Advice	Show this safety data sheet to the doctor in attendance.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention if irritation develops and persists.
Skin Contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation (redness, rash, blistering) develops, get medical attention.
Inhalation	Remove person to fresh air and keep comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately.
Ingestion	DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Most important symptoms and effects, both acute and delayed

None under normal use conditions.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Foam. Carbon dioxide (CO₂). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No information available.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. May emit toxic fumes under fire conditions. Hazardous polymerization may take place during a fire due to heat. Closed containers could violently rupture.

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. Cool containers / tanks with water spray. Sealed containers may rupture when heated.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures**Personal Precautions**

Remove all sources of ignition. Ventilate the area. Avoid contact with eyes, skin and clothing. Avoid breathing dust or vapor. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Keep out of drains, sewers, ditches and waterways. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Use clean non-sparking tools to collect absorbed material.

7. HANDLING AND STORAGE

Precautions for safe handling**Handling**

Use personal protective equipment as required. Do not eat, drink or smoke when using this product. Ensure adequate ventilation.

Conditions for safe storage, including any incompatibilities**Storage**

Keep at temperatures between 18°-32°C (65°-90°F). Keep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep out of the reach of children. Protect from direct sunlight. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible Products

Strong acids. Strong bases. Strong oxidizing agents. Reducing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**Exposure limits**

Component	ACGIH TLV
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³
Triethanolamine 102-71-6	TWA: 5 mg/m ³
Ethyl benzene (constituent) 100-41-4	TWA: 20 ppm

Component	OSHA PEL
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³ (total dust) TWA: 15 mg/m ³ (total dust)
Ethyl benzene (constituent) 100-41-4	TWA: 100 ppm TWA: 435 mg/m ³ STEL: 125 ppm STEL: 545 mg/m ³

Component	Ontario TWAEV
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³ (total dust)
Triethanolamine 102-71-6	TWA: 0.5 ppm TWA: 3.1 mg/m ³
Ethyl benzene (constituent) 100-41-4	TWA: 100 ppm STEL: 125 ppm

Component	Mexico OEL (TWA)
Titanium dioxide 13463-67-7	TWA/LMPE-PPT: 10 mg/m ³ (as Ti) STEL/LMPE-CT: 20 mg/m ³ (as Ti)
Ethyl benzene (constituent) 100-41-4	TWA/LMPE-PPT: 100 ppm TWA/LMPE-PPT: 435 mg/m ³ STEL/LMPE-CT: 125 ppm STEL/LMPE-CT: 545 mg/m ³

Appropriate engineering controls

Engineering Measures

Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Users are advised to consider national Occupational Exposure Limits or other equivalent values. In case of insufficient ventilation, wear suitable respiratory equipment.

Individual protection measures, such as personal protective equipment

Eye/face Protection

Wear safety glasses with side shields (or goggles). If splashes are likely to occur. Wear suitable face shield. Ensure that eyewash stations and safety showers are close to the workstation location.

Skin Protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory Protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice. Wash hands before eating, drinking or smoking. Wash contaminated clothing before reuse. Avoid contact with eyes, skin and clothing. Wear suitable gloves and eye/face protection. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Appearance	Colored Liquid
Odor	Mild Sweet Acrylic	Odor Threshold	No information available
Property	Values	Remarks • Method	
pH		No data available	
Melting point/freezing point		No data available	
Boiling point/Boiling Range	> 149 °C / 300 °F		
Flash Point	> 94 °C / > 201 °F	Pensky Martens Closed Cup (PMCC)	
Evaporation rate		No data available	
Flammability Limit in Air			
Upper flammability limit		No data available	
Lower flammability limit		No data available	
Vapor Pressure		No data available	
Vapor Density		No data available	
Specific Gravity	1.12		
Water Solubility		No data available	
Solubility in other solvents		No data available	
Partition coefficient: n-octanol/water		No data available	
Autoignition Temperature		No data available	

Decomposition temperature No data available
Kinematic viscosity No data available
Dynamic viscosity No data available

Explosive Properties No data available
Oxidizing Properties No data available

Other Information

Photochemically Reactive No
Weight Per Gallon (lbs/gal) 9.32

VOC by weight % (less water) 0-1	VOC by volume % (less water) No information available	VOC lbs/gal (less water) 0-1	VOC grams/liter (less water) 7.39
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10. STABILITY AND REACTIVITY

Reactivity

No information available.

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

None under normal processing. Do not store for longer periods at temperatures above 93°C (200°F).

Conditions to avoid

Temperatures above 93 °C / 200 °F. Protect from direct sunlight. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents. Reducing agent.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating gases and vapors. Carbon dioxide (CO₂). Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation There is no data for this product.
Eye Contact There is no data for this product.
Skin Contact There is no data for this product.
Ingestion There is no data for this product.

Component	Oral LD50
Glycol Ether Acrylate	4660 µL/kg (Rat)
Acrylated Monomer	5 g/kg (Rat)
Titanium dioxide 13463-67-7	>10000 mg/kg (Rat)
Triethanolamine 102-71-6	4190 mg/kg (Rat)
Ethyl benzene (constituent) 100-41-4	3500 mg/kg (Rat)

Component	LD50 Dermal
Acrylated Monomer	13 g/kg (Rabbit)
Glycol Ether Acrylate	2540 µL/kg (Rabbit)

Acrylated Monomer	3600 µL/kg (Rabbit)
Triethanolamine 102-71-6	>16 mL/kg (Rat) >2000 mg/kg (Rabbit)
Ethyl benzene (constituent) 100-41-4	15354 mg/kg (Rabbit)
Component	Inhalation LC50
Ethyl benzene (constituent) 100-41-4	17.2 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms There is no data for this product.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation There is no data for this product.
Eye damage/irritation There is no data for this product.
Irritation There is no data for this product.
Corrosivity There is no data for this product.
Sensitisation There is no data for this product.
Mutagenic Effects There is no data for this product.
Reproductive Effects There is no data for this product.
STOT - single exposure There is no data for this product.
STOT - repeated exposure There is no data for this product.
Chronic Toxicity There is no data for this product.
Aspiration hazard There is no data for this product.
Carcinogenicity There is no data for this product.
 The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH
Ethyl benzene (constituent) 100-41-4	A3

Component	IARC
Titanium dioxide 13463-67-7	Group 2B
Ethyl benzene (constituent) 100-41-4	Group 2B

Component	OSHA
Titanium dioxide 13463-67-7	X
Ethyl benzene (constituent) 100-41-4	X

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 4,642.00 mg/kg
ATEmix (dermal) 8,175.00 mg/kg mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

None known

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Component	Algae/aquatic plants
Triethanolamine 102-71-6	96h EC50 Desmodesmus subspicatus: 169 mg/L 72h EC50 Desmodesmus subspicatus: 216 mg/L

Ethyl benzene (constituent) 100-41-4	96h EC50 Pseudokirchneriella subcapitata: 1.7 - 7.6 mg/L [static] 72h EC50 Pseudokirchneriella subcapitata: 2.6 - 11.3 mg/L [static] 72h EC50 Pseudokirchneriella subcapitata: 4.6 mg/L 96h EC50 Pseudokirchneriella subcapitata: >438 mg/L
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Component	Fish
Triethanolamine 102-71-6	96h LC50 Pimephales promelas: 10600 - 13000 mg/L [flow-through] 96h LC50 Lepomis macrochirus: 450 - 1000 mg/L [static] 96h LC50 Pimephales promelas: >1000 mg/L [static]
Ethyl benzene (constituent) 100-41-4	96h LC50 Oncorhynchus mykiss: 11.0 - 18.0 mg/L [static] 96h LC50 Pimephales promelas: 7.55 - 11 mg/L [flow-through] 96h LC50 Pimephales promelas: 9.1 - 15.6 mg/L [static] 96h LC50 Lepomis macrochirus: 32 mg/L [static] 96h LC50 Oncorhynchus mykiss: 4.2 mg/L [semi-static] 96h LC50 Poecilia reticulata: 9.6 mg/L [static]

Component	Crustacea
Triethanolamine 102-71-6	24h EC50 Daphnia magna: 1386 mg/L
Ethyl benzene (constituent) 100-41-4	48h EC50 Daphnia magna: 1.8 - 2.4 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

No information available.

Component	Partition coefficient
Triethanolamine 102-71-6	-2.53
Ethyl benzene (constituent) 100-41-4	3.118

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods**Waste Disposal Methods**

Contain and dispose of waste according to local regulations.

Contaminated Packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name

Not regulated

Printing Ink

ICAO / IATA / IMDG / IMO

Proper Shipping Name

Not Regulated

Printing Ink

15. REGULATORY INFORMATION

International Inventories

All components are listed on the TSCA Inventory. For further information, please contact: Supplier (manufacturer/importer/downstream user/distributor).

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	Trade Secret	10 - 30	1.0
Glycol Ether Acrylate	Trade Secret	1 - 5	1.0
Ethyl benzene (constituent)	100-41-4	< 0.5	0.1

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 substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act..

Component	CAS-No	Weight %
Glycol Ether Acrylate	Trade Secret	10 - 30
Glycol Ether Acrylate	Trade Secret	1 - 5

U.S. State Regulations

Component	Massachusetts Right To Know
Titanium dioxide 13463-67-7	X
Triethanolamine 102-71-6	X
Ethyl benzene (constituent) 100-41-4	X

Component	Minnesota Right To Know
Acrylated Monomer	X
Titanium dioxide 13463-67-7	X
Triethanolamine 102-71-6	X
Ethyl benzene (constituent) 100-41-4	X

Component	New Jersey Right To Know
Glycol Ether Acrylate	X
Copper Phthalocyanine Compound	X
Titanium dioxide 13463-67-7	X
Triethanolamine 102-71-6	X
Glycol Ether Acrylate	X
Ethyl benzene (constituent) 100-41-4	X

Component	Pennsylvania Right To Know
Glycol Ether Acrylate	X
Copper Phthalocyanine Compound	X
Titanium dioxide 13463-67-7	X

Triethanolamine 102-71-6	X
Glycol Ether Acrylate	X
Ethyl benzene (constituent) 100-41-4	X

California Prop. 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm

Component	California Prop. 65
Titanium dioxide	Carcinogen
Ethyl benzene (constituent)	Carcinogen

This product contains titanium dioxide in a non-respirable form. Inhalation of titanium dioxide is unlikely to occur from exposure to this product

Canada

Component	NPRI - National Pollutant Release Inventory
Copper Phthalocyanine Compound	Part 1, Group A Substance total of the pure element and the equivalent weight of the element contained in any compound, alloy or mixture
Triethanolamine 102-71-6	Part 4 Substance as set out in Section 65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999
Ethyl benzene (constituent) 100-41-4	Part 1, Group A Substance Part 4 Substance as set out in Section 65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999

16. OTHER INFORMATION

HMIS:	Health	Flammability	Reactivity	Personal Protection
	2	1	1	X

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)
STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value

ACGIH: (American Conference of Governmental Industrial Hygienists)

- A1 - Known Human Carcinogen
- A2 - Suspected Human Carcinogen
- A3 - Animal Carcinogen

IARC: (International Agency for Research on Cancer)

- Group 1 - Carcinogenic to Humans
- Group 2A - Probably Carcinogenic to Humans
- Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

- Known - Known Carcinogen
- Reasonably Anticipated to be a Human Carcinogen

OSHA: (Occupational Safety & Health Administration)

- X - Present

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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