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1. IDENTIFICATION

Product identifier

Product code NFX57
Product name Hi Gloss Anti-Graffiti Clear
Product category UV Special Effect Screen Ink

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Industrial 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: +001-913-422-1888	Stockport, England SK4 3EG
Tel: +001-800-677-4657	Tel: +44 161 442 2111
Fax: +001-913-422-2294	
www.nazdar.com	

Emergency telephone number

USA: Chemtrec: +001-800-424-9300
Outside USA: Chemtrec: +001-703-527-3887
24 Hour Emergency Phone Number

2. HAZARDS IDENTIFICATION

Classification

Skin Corrosion/Irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 1 - (H318)
Skin sensitization	Category 1 - (H317)
Carcinogenicity	Category 2 - (H351)
Specific target organ toxicity (repeated exposure)	Category 2 - (H373)
Acute aquatic toxicity	Category 1 - (H400)
Chronic aquatic toxicity	Category 2 - (H411)

Label elements



Signal Word
Danger

Hazard Statements
H315 - Causes skin irritation

H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H351 - Suspected of causing cancer
 H373 - May cause damage to organs through prolonged or repeated exposure
 H400 - Very toxic to aquatic life
 H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements

P264 - Wash face, hands and any exposed skin thoroughly after handling
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
 P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
 P202 - Do not handle until all safety precautions have been read and understood
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P308 + P313 - IF exposed or concerned: Get medical advice/attention
 P314 - Get medical advice/attention if you feel unwell
 P273 - Avoid release to the environment

Hazards not otherwise classified (HNOC)

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Component	CAS-No	Weight %	Trade Secret	Note
N-Vinyl-2-pyrrolidone	88-12-0	10 - 30	*	
Acrylated Monomer	Trade Secret	10 - 30	*	
Acrylated Monomer	Trade Secret	10 - 30	*	
Photoinitiator	Trade Secret	5 - 10	*	
Acrylated resin	Trade Secret	1 - 5	*	
Acrylated Oligomer	Trade Secret	1 - 5	*	
Acrylated Oligomer	Trade Secret	0.1 - < 1	*	
Acrylated Monomer	Trade Secret	0.1 - < 1	*	

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

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
N-Vinyl-2-pyrrolidone 88-12-0	TWA: 0.05 ppm

Component	Ontario TWAEV
N-Vinyl-2-pyrrolidone 88-12-0	TWA: 0.05 ppm

Component	Mexico OEL (TWA)
N-Vinyl-2-pyrrolidone 88-12-0	TWA/VLE-PPT: 0.05 ppm

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.
- Hand Protection** Chemical resistant protective gloves. Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding >480 minutes of permeation time): eg. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers. Taking into account the varying conditions, the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Due to different glove types, the manufacturer's directions for use should be observed. Replace gloves immediately when torn or any change in appearance is noticed such as dimension, color, flexibility.
- 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. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material.

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	Color	Colored
Odor	Sweet Mild Acrylic	Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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)	9.35

VOC by weight % (less water) 0-1	VOC by volume % (less water) 0-1	VOC lbs/gal (less water) 0-1	VOC grams/liter (less water) 0-1
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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	Specific test data for the substance or mixture is not available.
Eye Contact	Specific test data for the substance or mixture is not available.
Skin Contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Component	Oral LD50
N-Vinyl-2-pyrrolidone 88-12-0	= 830 mg/kg (Rat)
Acrylated Monomer	= 5190 mg/kg (Rat)
Acrylated Monomer	= 5 g/kg (Rat)
Photoinitiator	= 1694 mg/kg (Rat)
Acrylated Oligomer	= 820 mg/kg (Rat)

Component	Dermal LD50
N-Vinyl-2-pyrrolidone 88-12-0	= 560 mg/kg (Rabbit)
Acrylated Monomer	= 5000 mg/kg (Rabbit)
Acrylated Monomer	= 3600 mg/kg (Rabbit)
Photoinitiator	= 6929 mg/kg (Rat)
Acrylated Oligomer	> 1000 mg/kg (Rat)
Acrylated Monomer	> 2000 mg/kg (Rabbit)

Component	Inhalation LC50
N-Vinyl-2-pyrrolidone 88-12-0	= 3070 mg/m ³ (Rat) 4 h

Information on toxicological effects

Symptoms Specific test data for the substance or mixture is not available.

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

Skin corrosion/irritation Specific test data for the substance or mixture is not available. Causes skin irritation (pain, redness and swelling). (based on components).

Eye damage/irritation Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components).

Irritation Specific test data for the substance or mixture is not available.

Corrosivity Specific test data for the substance or mixture is not available.

Sensitization Specific test data for the substance or mixture is not available. May cause an allergic skin reaction. (based on components).

Mutagenic Effects Specific test data for the substance or mixture is not available.

Carcinogenic effects Specific test data for the substance or mixture is not available. Suspected of causing cancer. (based on components).

Reproductive Effects Specific test data for the substance or mixture is not available.

STOT - single exposure Specific test data for the substance or mixture is not available.

STOT - repeated exposure Specific test data for the substance or mixture is not available. May cause damage to organs through prolonged or repeated exposure. (based on components).

Chronic Toxicity Specific test data for the substance or mixture is not available

Aspiration hazard Specific test data for the substance or mixture is not available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH
N-Vinyl-2-pyrrolidone 88-12-0	A3

Component	OSHA
Acrylated Monomer	X

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

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

ATEmix (oral) 2,803.00 mg/kg
ATEmix (dermal) 5,198.00 mg/kg
ATEmix (inhalation-dust/mist) 7.40 mg/l
ATEmix (inhalation-vapor) 52.00 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Specific test data for the substance or mixture is not available. Very toxic to aquatic life. (based on components). Toxic to aquatic life with long lasting effects.

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

Component	Algae/aquatic plants
N-Vinyl-2-pyrrolidone 88-12-0	72h EC50 Desmodesmus subspicatus: = 780 mg/L

Component	Fish
Acrylated Oligomer	96h LC50 Pimephales promelas: = 1.9 mg/L (flow-through)
Acrylated Monomer	96h LC50 Danio rerio: = 5.74 mg/L [static]

Component	Crustacea
N-Vinyl-2-pyrrolidone 88-12-0	48h EC50 Daphnia species: = 45 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

Component	Partition coefficient
N-Vinyl-2-pyrrolidone 88-12-0	0.4

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

Note:

This information is not intended to convey all specific transportation requirements relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation information can be found in the specific regulations for your mode of transportation. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

DOT

UN/ID no	UN2810
Proper Shipping Name	Toxic Liquid, Organic, N.O.S. (N-Vinyl-2-Pyrrolidone)
Hazard Class	6.1
Packing Group	III

ICAO / IATA / IMDG / IMO

UN/ID no	UN2810
Proper Shipping Name	Toxic Liquid, Organic, N.O.S. (N-Vinyl-2-Pyrrolidone)

Hazard Class 6.1
Packing Group III

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 does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

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

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

U.S. State Regulations

Component	Minnesota Right To Know
Acrylated Monomer	X
Acrylated Monomer	X

Component	New Jersey Right To Know
N-Vinyl-2-pyrrolidone 88-12-0	X

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects

Canada

No information available

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

Revision Date

Aug-13-2021

Pursuant to NOM-018-STPS-2015

This information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

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 Safety Data Sheet