SAFETY DATA SHEET

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

Product identifier

Product code NFX55

Product name UV Dry Erase 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 Printing operations

Details of the supplier of the safety data sheet

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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)

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

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

Hazards not otherwise classified (HNOC)
No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Component	CAS-No	Weight %	Trade Secret	Note
Acrylated Monomer	Trade Secret	10 - 30	*	
N-Vinyl-2-pyrrolidone	88-12-0	10 - 30	*	
Silicon dioxide, amorphous	7631-86-9	5 - 10	*	
Acrylated Monomer	Trade Secret	5 - 10	*	
Photoinitiator	Trade Secret	5 - 10	*	
Acrylated Monomer	Trade Secret	< 1	*	
Acrylated Oligomer	Trade Secret	< 1	*	
Acrylated Monomer	Trade Secret	< 0.5	*	

*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	OSHA PEL (vacated)
Silicon dioxide, amorphous 7631-86-9	TWA: 6 mg/m^3

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

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
Odor	Sweet Mild 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	1.14	
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) 9.46

VOC by weight % (less water)	VOC by volume % (less water)	VOC lbs/gal (less water)	VOC grams/liter (less water)
0-1	0-1	0-1	0-1

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
Acrylated Monomer	= 5 g/kg (Rat)
N-Vinyl-2-pyrrolidone 88-12-0	= 830 mg/kg (Rat)
Silicon dioxide, amorphous 7631-86-9	= 7900 mg/kg (Rat)
Acrylated Monomer	= 5190 mg/kg (Rat)
Photoinitiator	= 1694 mg/kg (Rat)
Acrylated Monomer	= 6200 mg/kg (Rat)
Acrylated Oligomer	= 820 mg/kg (Rat)

Component	Dermal LD50
Acrylated Monomer	= 3600 mg/kg (Rabbit)
N-Vinyl-2-pyrrolidone 88-12-0	= 560 mg/kg (Rabbit)
Silicon dioxide, amorphous 7631-86-9	> 2000 mg/kg (Rabbit)
Acrylated Monomer	= 5000 mg/kg (Rabbit)
Acrylated Monomer	> 2 g/kg (Rabbit)
Acrylated Oligomer	= 306 mg/kg (Rabbit)

Component	Inhalation LC50
N-Vinyl-2-pyrrolidone 88-12-0	= 3070 mg/m^3 (Rat) 4 h
Silicon dioxide, amorphous	> 2.2 mg/L (Rat) 1 h

7631-86-9	

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

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) 3,254.00 mg/kg

ATEmix (dermal) 5,712.00 mg/kg

ATEmix (inhalation-dust/mist) 8.00 mg/l

ATEmix (inhalation-vapor) 57.00 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

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

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
Silicon dioxide, amorphous 7631-86-9	72h EC50 Pseudokirchneriella subcapitata: = 440 mg/L
Acrylated Monomer	72h EC50 Desmodesmus subspicatus: > 28 mg/L

Component	Fish
Silicon dioxide, amorphous 7631-86-9	96h LC50 Brachydanio rerio: = 5000 mg/L (static)
Acrylated Oligomer	96h LC50 Pimephales promelas: = 1.9 mg/L (flow-through)

Component	Crustacea
N-Vinyl-2-pyrrolidone 88-12-0	48h EC50 Daphnia species: = 45 mg/L
Silicon dioxide, amorphous 7631-86-9	48h EC50 Ceriodaphnia dubia: = 7600 mg/L
Acrylated Monomer	48h EC50 Daphnia magna: = 88.7 mg/L

Persistence and Degradability
No information available.

Bioaccumulation
No information available

Component	Partition coefficient
N-Vinyl-2-pyrrolidone 88-12-0	0.4
Acrylated Monomer	2.77

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
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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	Massachusetts Right To Know
Silicon dioxide, amorphous 7631-86-9	X

Component	Minnesota Right To Know
Acrylated Monomer	X
Silicon dioxide, amorphous 7631-86-9	X
Acrylated Monomer	X

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

Component	Pennsylvania Right To Know
Silicon dioxide, amorphous 7631-86-9	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

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.

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 Sep-07-2018

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