



Material Safety Data Sheet

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

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1. PRODUCT AND COMPANY IDENTIFICATION

Product code S275
Product name Super Opaque White
Product description System 2 (S2) Series Gloss Vinyl 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.
Flammable Properties Combustible liquid and vapor.
Emergency Overview Harmful. Irritant. May cause drowsiness and dizziness.
Eyes Severe eye irritant. The liquid splashed in the eyes may cause irritation and reversible damage.
Skin Harmful in contact with skin. May be absorbed through the skin in harmful amounts. Causes skin irritation. Prolonged skin contact may defat the skin and produce dermatitis.
Inhalation Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Titanium dioxide	13463-67-7	30 - 60
Ethylene glycol monopropyl ether	2807-30-9	10 - 30
Cyclohexanone	108-94-1	10 - 30
Ethylene glycol monobutyl ether acetate	112-07-2	5 - 10
Diethylene Glycol Ethyl Ether Acetate	112-15-2	1 - 5
Aluminum hydroxide	21645-51-2	1 - 5
Ethyl alcohol	64-17-5	< 0.5

4. FIRST AID MEASURES

Skin Contact 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 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 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 Combustible liquid and vapor.

Suitable Extinguishing Media Foam. Carbon dioxide (CO₂). 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. Fire or intense heat may cause violent rupture of packages.

Specific Hazards Arising from the Chemical 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 Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. 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 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. Keep away from heat and sources of ignition. Take notice of the directions of use on the label.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component	Weight %	ACGIH TLV	OSHA PEL	Ontario TWAEV
Titanium dioxide	30 - 60	TWA: 10 mg/m ³	TWA: 10 mg/m ³ TWA: 15 mg/m ³	TWA: 10 mg/m ³
Ethylene glycol monopropyl ether	10 - 30			TWA: 25 ppm TWA: 110 mg/m ³ Skin
Cyclohexanone	10 - 30	TWA: 20 ppm Skin STEL: 50 ppm	TWA: 25 ppm TWA: 100 mg/m ³ Skin TWA: 50 ppm TWA: 200 mg/m ³	TWA: 20 ppm STEL: 50 ppm Skin
Ethylene glycol monobutyl ether acetate	5 - 10	TWA: 20 ppm		TWA: 20 ppm
Aluminum hydroxide	1 - 5	TWA: 1 mg/m ³		

Component	Weight %	ACGIH TLV	OSHA PEL	Ontario TWAEV
Ethyl alcohol	< 0.5	TWA: 1000 ppm	TWA: 1900 mg/m ³ TWA: 1000 ppm	TWA: 1900 mg/m ³ TWA: 1000 ppm

Component	Weight %	NIOSH IDLH	Mexico OEL (TWA)
Titanium dioxide	30 - 60	5000 mg/m ³	TWA: 10 mg/m ³ STEL: 20 mg/m ³
Cyclohexanone	10 - 30	700 ppm	TWA: 50 ppm TWA: 200 mg/m ³ STEL: 400 mg/m ³ STEL: 100 ppm
Ethyl alcohol	< 0.5	3300 ppm 10% LEL	TWA: 1000 ppm TWA: 1900 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	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	Flash Point	46°C / 115°F
Flammability Limits in Air		Method	Pensky Martens Closed Cup (PMCC)
Upper	No information available	Photochemically Reactive	No
Lower	No information available		
Weight Per Gallon (lbs/gal)	11.206	Specific Gravity	1.34
VOC by weight	43.938	VOC by volume	58.453
VOC lbs/gal	4.929	VOC grams/liter	590.576

10. STABILITY AND REACTIVITY

Chemical Stability

Stable under normal conditions.

Conditions to Avoid

Heat, flames and sparks.

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 (CO₂). Carbon monoxide.

Possibility of Hazardous Reactions None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Titanium dioxide	10000 mg/kg (Rat)		
Ethylene glycol monopropyl ether	3089 mg/kg (Rat)	960 µL/kg (Rabbit)	
Cyclohexanone	800 mg/kg (Rat)	948 mg/kg (Rabbit)	10.7 mg/L (Rat) 4 h 8000 ppm (Rat) 4 h
Ethylene glycol monobutyl ether acetate	1600 mg/kg (Rat)	1480 mg/kg (Rabbit)	
Diethylene Glycol Ethyl Ether Acetate	11 g/kg (Rat)	15100 µL/kg (Rabbit)	
Aluminum hydroxide	5000 mg/kg (Rat)		
Ethyl alcohol	7060 mg/kg (Rat)		

Chronic Toxicity

Component	ACGIH	IARC	NTP	OSHA
Titanium dioxide		Group 2B		X
Cyclohexanone	A3			
Ethylene glycol monobutyl ether acetate	A3			
Ethyl alcohol		Group 1		X

Legend:

ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC: (International Agency for Research on Cancer)

OSHA: (Occupational Safety & Health Administration)

A3 - Animal Carcinogen
Group 1 - Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
X - Present

Sensitisation

No information available

Mutagenic Effects

No information available

Reproductive Effects

No information available

Developmental Effects

No information available

Teratogenicity

No information available

Chronic Effects

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effect, such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Blood, Central nervous system, Eyes, Hematopoietic System, Kidney, Liver, Lungs, Respiratory system, Skin.

Target Organ Effects

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
Cyclohexanone	96 Hr EC50 <i>Chlorella vulgaris</i> : 20 mg/L	96 Hr LC50 <i>Pimephales promelas</i> : 8.9 mg/L	48 Hr EC50 water flea: 820 mg/L; 48 Hr EC50 <i>Daphnia magna</i> : 800 mg/L
Ethylene glycol monobutyl ether acetate	72 Hr EC50 <i>Scenedesmus subspicatus</i> : >500 mg/L		48 Hr EC50 water flea: 37 mg/L

Component	Freshwater Algae	Freshwater Fish	Water Flea
Ethyl alcohol		96 Hr LC50 Oncorhynchus mykiss: 12900 mg/L [flow-through] (30 days old); 96 Hr LC50 Pimephales promelas: 14.2 mg/L	48 Hr EC50 Daphnia magna: 9268 mg/L; 24 Hr EC50 Daphnia magna: 10800 mg/L

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

Component	log Pow
Cyclohexanone	0.86
Ethylene glycol monobutyl ether acetate	1.51
Ethyl alcohol	-0.32

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

DOT

UN1210, Printing Ink, 3, III

ICAO/IATA

UN1210, Printing Ink, 3, III

IMDG/IMO

UN1210, Printing Ink, 3, III

15. REGULATORY INFORMATION

International Inventories

Listed on TSCA. For further information, please contact: Manufacturer, importer, supplier

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
Diethylene Glycol Ethyl Ether Acetate	112-15-2	1 - 5	1.0
Ethylene glycol monopropyl ether	2807-30-9	10 - 30	1.0
Ethylene glycol monobutyl ether acetate	112-07-2	5 - 10	1.0

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

This product contains the following HAPs:

Component	CAS-No	Weight %
Diethylene Glycol Ethyl Ether Acetate	112-15-2	1 - 5
Ethylene glycol monopropyl ether	2807-30-9	10 - 30
Ethylene glycol monobutyl ether acetate	112-07-2	5 - 10

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	< 0.01
Vinyl chloride	75-01-4	< 0.0001
Quartz, crystalline silica	14808-60-7	< 0.001
Ethyl alcohol	64-17-5	< 0.5

State Right-to-Know

Component	Minnesota	Florida	New Jersey	Pennsylvania	Massachusetts	Rhode Island
Titanium dioxide	Not Listed	Not Listed	X	X	X	X
Ethylene glycol monopropyl ether	Not Listed	Not Listed	X	X	Not Listed	Not Listed
Cyclohexanone	Not Listed	Not Listed	X	X	X	X
Ethylene glycol monobutyl ether acetate	Not Listed	Not Listed	X	X	Not Listed	Not Listed
Diethylene Glycol Ethyl Ether Acetate	Not Listed	Not Listed	X	X	Not Listed	Not Listed
Aluminum hydroxide	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Ethyl alcohol	Not Listed	Not Listed	X	X	X	X

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
Titanium dioxide	D2A
Ethylene glycol monopropyl ether	B3, D1B, D2B
Cyclohexanone	B3, D1B, D2B
Ethylene glycol monobutyl ether acetate	B3
Diethylene Glycol Ethyl Ether Acetate	Uncontrolled product according to WHMIS classification criteria
Aluminum hydroxide	Uncontrolled product according to WHMIS classification criteria

Component	NPRI - National Pollutant Release Inventory
Ethylene glycol monopropyl ether	Part 4 Substance
Cyclohexanone	Part 4 Substance
Ethylene glycol monobutyl ether acetate	Part 4 Substance Part 5 Substance
Diethylene Glycol Ethyl Ether Acetate	Part 4 Substance Part 5 Substance
Ethyl alcohol	Part 5 Substance 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 2* Flammability 2 Instability 0 PPE X

16. OTHER INFORMATION

Revision Date Feb-20-2009
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