



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 6001631388
Product name Special 88 Opaque Yellow
Product description 8800 Series Color-Vue Membrane 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
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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 Aspiration hazard. Harmful: may cause lung damage if swallowed. Irritant. May cause drowsiness and dizziness.

Eyes Moderately irritating to the eyes. Risk of serious damage to eyes. Avoid contact with eyes.
Skin May cause skin irritation and/or dermatitis.
Inhalation May cause irritation of respiratory tract. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Ingestion Harmful if swallowed. Potential for aspiration if swallowed. Risk of serious damage to the lungs (by aspiration).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Naphtha (petroleum), heavy aromatic	64742-94-5	30 - 60
Gamma Butyrolactone	96-48-0	10 - 30
Titanium dioxide	13463-67-7	5 - 10
2-Butoxyethanol	111-76-2	1 - 5
Vanadium Compounds	Trade Secret	1 - 5
Naphthalene (contaminant)	91-20-3	1 - 5
Ethylene glycol monopropyl ether	2807-30-9	1 - 5
Cyclohexanone	108-94-1	1 - 5
1,2,4-Trimethylbenzene (contaminant)	95-63-6	< 1

- Component names which have the word (contaminant) are constituents contained in Aromatic Hydrocarbon ingredients and are an integral part of the ingredient and cannot be separated. The percentage listed for the contaminant is as contained in the Hydrocarbon ingredient. (Example: 100% Hydrocarbon, 10% Contaminant A, 3% Contaminant B)

4. FIRST AID MEASURES

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.

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.
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 (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. 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	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	ACGIH TLV	OSHA PEL	NIOSH IDLH	Ontario TWAEV	Mexico OEL (TWA)
Titanium dioxide	TWA: 10 mg/m ³	TWA: 10 mg/m ³ TWA: 15 mg/m ³	5000 mg/m ³	TWA: 10 mg/m ³	TWA: 10 mg/m ³ STEL: 20 mg/m ³
2-Butoxyethanol	TWA: 20 ppm	TWA: 120 mg/m ³ TWA: 25 ppm Skin TWA: 50 ppm TWA: 240 mg/m ³	700 ppm	TWA: 20 ppm Skin	TWA: 120 mg/m ³ TWA: 26 ppm STEL: 360 mg/m ³ STEL: 75 ppm

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Ontario TWAEV	Mexico OEL (TWA)
Naphthalene (contaminant)	TWA: 10 ppm Skin STEL: 15 ppm	TWA: 50 mg/m ³ TWA: 10 ppm STEL: 15 ppm STEL: 75 mg/m ³	250 ppm	TWA: 10 ppm TWA: 52 mg/m ³ STEL: 15 ppm STEL: 78 mg/m ³	TWA: 10 ppm TWA: 50 mg/m ³ STEL: 75 mg/m ³ STEL: 15 ppm
Ethylene glycol monopropyl ether				TWA: 25 ppm TWA: 110 mg/m ³ Skin	
Cyclohexanone	TWA: 20 ppm Skin STEL: 50 ppm	TWA: 25 ppm TWA: 100 mg/m ³ Skin TWA: 50 ppm TWA: 200 mg/m ³	700 ppm	TWA: 20 ppm STEL: 50 ppm Skin	TWA: 50 ppm TWA: 200 mg/m ³ STEL: 400 mg/m ³ STEL: 100 ppm
1,2,4-Trimethylbenzene (contaminant)	TWA: 25 ppm			TWA: 25 ppm TWA: 123 mg/m ³	TWA: 125 mg/m ³ TWA: 25 ppm STEL: 35 ppm STEL: 170 mg/m ³

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	49°C / 120°F
Flammability Limits in Air		Method	Pensky Martens Closed Cup (PMCC)
Upper	No information available	Photochemically Reactive	Yes
Lower	No information available	Specific Gravity	1.143
Weight Per Gallon (lbs/gal)	9.532	VOC by volume %	61.233
VOC by weight %	60.389	VOC grams/liter (less water)	690.455
VOC lbs/gal (less water)	5.762		

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
Naphtha (petroleum), heavy aromatic	5000 mg/kg (Rat)	2000 mg/kg (Rabbit)	590 mg/m ³ (Rat) 4 h
Gamma Butyrolactone	1540 mg/kg (Rat)		2.68 mg/L (Rat) 4 h
Titanium dioxide	10000 mg/kg (Rat)		
2-Butoxyethanol	470 mg/kg (Rat)	2270 mg/kg (Rat) 220 mg/kg (Rabbit)	2.21 mg/L (Rat) 4 h 450 ppm (Rat) 4 h
Naphthalene (contaminant)	490 mg/kg (Rat)	2500 mg/kg (Rat) 20 g/kg (Rabbit)	340 mg/m ³ (Rat) 1 h
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
1,2,4-Trimethylbenzene (contaminant)	3400 mg/kg (Rat) 8970 mg/kg (Rat)	3160 mg/kg (Rabbit)	18 g/m ³ (Rat) 4 h

Chronic Toxicity

Component	ACGIH	IARC	NTP	OSHA
Titanium dioxide		Group 2B		X
2-Butoxyethanol	A3			
Naphthalene (contaminant)		Group 2B	Reasonably Anticipated	X
Cyclohexanone	A3			

ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC: (International Agency for Research on Cancer)

NTP: (National Toxicity Program)

OSHA: (Occupational Safety & Health Administration)

A3 - Animal Carcinogen
Group 2B - Possibly Carcinogenic to Humans
Reasonably Anticipated to be a Human Carcinogen
X - Present

Sensitisation

Mutagenic Effects

Reproductive Effects

Developmental Effects

Teratogenicity

Chronic Effects

No information available

No information available

No information available

No information available

No information available

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.

Target Organ Effects

Blood, Central nervous system, Eyes, Hematopoietic System, Lungs, Liver, Kidney, Respiratory system, Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

We have no quantitative data concerning the ecological effects of this product. Should not be released into the environment.

Component	Freshwater Algae	Freshwater Fish	Water Flea
Naphtha (petroleum), heavy aromatic	72 Hr EC50 Skeletonema costatum: 2.5 mg/L	96 Hr LC50 Pimephales promelas: 19 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 2.34 mg/L; 96 Hr LC50 Lepomis macrochirus: 1740 mg/L [static]	48 Hr EC50 Daphnia magna: 0.95 mg/L

Component	Freshwater Algae	Freshwater Fish	Water Flea
Gamma Butyrolactone	72 Hr EC50 Scenedesmus subspicatus: 360 mg/L; 96 Hr EC50 Scenedesmus subspicatus: 79 mg/L	96 Hr LC50 Leuciscus idus: 220-460 mg/L [static]	48 Hr EC50 Daphnia magna Straus: >500 mg/L
2-Butoxyethanol		96 Hr LC50 Lepomis macrochirus: 2950 mg/L	24 Hr EC50 water flea: 1720 mg/L; 24 Hr LC50 Daphnia magna: 1698-1940 mg/L
Naphthalene (contaminant)	96 Hr EC50 Skeletonema costatum: 0.4 mg/L	96 Hr LC50 Pimephales promelas: 1.99 mg/L [static]	48 Hr EC50 water flea: 2.16 mg/L
Cyclohexanone	96 Hr EC50 Chlorella vulgaris: 20 mg/L	96 Hr LC50 Pimephales promelas: 8.9 mg/L	48 Hr EC50 water flea: 820 mg/L; 48 Hr EC50 Daphnia magna: 800 mg/L
1,2,4-Trimethylbenzene (contaminant)		96 Hr LC50 Pimephales promelas: 7.72 mg/L [flow-through]	48 Hr EC50 Daphnia magna: 6.14 mg/L

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

Component	log Pow
Naphtha (petroleum), heavy aromatic	2.9 - 6.1
Gamma Butyrolactone	-0.566
2-Butoxyethanol	0.81
Cyclohexanone	0.86

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
 In the U.S. and Canada, this material may be reclassified as a combustible liquid and is not regulated, via surface transportation, in containers less than 119 gallons or 450 liters [per 49 CFR 173.150 (f)] [per Transportation of Dangerous Goods Regulations/Clear Language Part 1.33].

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
2-Butoxyethanol	111-76-2	1 - 5	1.0
Ethylene glycol monopropyl ether	2807-30-9	1 - 5	1.0
Naphthalene (contaminant)	91-20-3	1 - 5	0.1

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Vanadium Compounds	Mixture	1 - 5	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 %
Ethylene glycol monopropyl ether	2807-30-9	1 - 5
Naphthalene (contaminant)	91-20-3	1 - 5

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 %
Naphthalene (contaminant)	91-20-3	1 - 5

State Right-to-Know

Component	Minnesota	Florida	New Jersey	Pennsylvania	Massachusetts	Rhode Island
Naphtha (petroleum), heavy aromatic	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Gamma Butyrolactone	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Titanium dioxide	Not Listed	Not Listed	X	X	X	X
2-Butoxyethanol	Not Listed	Not Listed	X	X	X	X
Vanadium Compounds	Not Listed	Not Listed	X	Not Listed	Not Listed	Not Listed
Naphthalene (contaminant)	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
1,2,4-Trimethylbenzene (contaminant)	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
2-Butoxyethanol	B3, D1A, D2B
Naphthalene (contaminant)	B4, D2A
Ethylene glycol monopropyl ether	B3, D1B, D2B
Cyclohexanone	B3, D1B, D2B
1,2,4-Trimethylbenzene (contaminant)	B3

Component	NPRI - National Pollutant Release Inventory
Naphtha (petroleum), heavy aromatic	Part 5 Substance Part 4 Substance
Gamma Butyrolactone	Part 4 Substance
2-Butoxyethanol	Part 4 Substance Part 1, Group 1 Substance; Part 5 Substance
Vanadium Compounds	Part 1, Group 1 Substance
Naphthalene (contaminant)	Part 1, Group 1 Substance Part 4 Substance
Ethylene glycol monopropyl ether	Part 4 Substance
Cyclohexanone	Part 4 Substance
1,2,4-Trimethylbenzene (contaminant)	Part 1, Group 1 Substance; Part 5 Substance Part 5 Substance (except 1,2,4-Trimethyl benzene) 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	Reactivity	PPE
	3*	2	0	X

16. OTHER INFORMATION

Revision Date Mar-29-2010

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