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1

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

Product identifier

Product code **VF440**
Product name **Process Blue**
Product category **VF Series Flat Vinyl 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

Serious eye damage/eye irritation	Category 2 - (H319)
Aspiration toxicity	Category 1 - (H304)
Flammable liquids	Category 3 - (H226)

Label elements



Signal Word
Danger

Hazard Statements

H304 - May be fatal if swallowed and enters airways
H319 - Causes serious eye irritation
H226 - Flammable liquid and vapor

Precautionary Statements

P331 - Do NOT induce vomiting
 P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Hazards not otherwise classified (HNOC)

May be harmful if swallowed. May be harmful in contact with skin.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Component	CAS-No	Weight %	Trade Secret	Note
Naphtha (petroleum), heavy aromatic	64742-94-5	30 - 60	*	
Titanium dioxide	13463-67-7	5 - 10	*	
Gamma Butyrolactone	96-48-0	5 - 10	*	
Diacetone alcohol	123-42-2	5 - 10	*	
Cyclohexanone	108-94-1	5 - 10	*	
Crystalline silica (cristobalite)	14464-46-1	1 - 5	*	
Naphthalene (constituent)	91-20-3	1 - 5	*	1
Inert Pigment	Trade Secret	1 - 5	*	
1,2,4-Trimethylbenzene (constituent)	95-63-6	< 1	*	1
Quartz, crystalline silica	14808-60-7	< 0.5	*	

*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.

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 containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep container closed when not in use. Keep out of the reach of children.

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
Diacetone alcohol 123-42-2	TWA: 50 ppm
Cyclohexanone 108-94-1	TWA: 20 ppm STEL: 50 ppm Skin
Crystalline silica (cristobalite) 14464-46-1	TWA: 0.025 mg/m ³ (respirable fraction)
Naphthalene (constituent) 91-20-3	TWA: 10 ppm STEL: 15 ppm Skin
Quartz, crystalline silica 14808-60-7	TWA: 0.025 mg/m ³ (respirable fraction)

Component	OSHA PEL
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³ (total dust) TWA: 15 mg/m ³ (total dust)
Diacetone alcohol 123-42-2	TWA: 50 ppm TWA: 240 mg/m ³

Cyclohexanone 108-94-1	TWA: 25 ppm TWA: 100 mg/m ³ TWA: 50 ppm TWA: 200 mg/m ³ Skin
Crystalline silica (cristobalite) 14464-46-1	TWA: 0.05 mg/m ³ (respirable dust)
Naphthalene (constituent) 91-20-3	TWA: 10 ppm TWA: 50 mg/m ³ STEL: 15 ppm STEL: 75 mg/m ³
Quartz, crystalline silica 14808-60-7	TWA: 0.1 mg/m ³ (respirable dust)

Component	Ontario TWAEV
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³ (total dust)
Diacetone alcohol 123-42-2	TWA: 50 ppm TWA: 240 mg/m ³ STEL: 75 ppm STEL: 360 mg/m ³
Cyclohexanone 108-94-1	TWA: 20 ppm STEL: 50 ppm Skin
Crystalline silica (cristobalite) 14464-46-1	TWA: 0.05 mg/m ³ (respirable)
Naphthalene (constituent) 91-20-3	TWA: 10 ppm STEL: 15 ppm Skin
Quartz, crystalline silica 14808-60-7	TWA: 0.10 mg/m ³ (respirable)

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)
Diacetone alcohol 123-42-2	TWA/LMPE-PPT: 50 ppm TWA/LMPE-PPT: 240 mg/m ³ STEL/LMPE-CT: 75 ppm STEL/LMPE-CT: 360 mg/m ³
Cyclohexanone 108-94-1	TWA/LMPE-PPT: 50 ppm TWA/LMPE-PPT: 200 mg/m ³ STEL/LMPE-CT: 100 ppm STEL/LMPE-CT: 400 mg/m ³
Crystalline silica (cristobalite) 14464-46-1	TWA/LMPE-PPT: 0.05 mg/m ³ (respirable fraction)
Naphthalene (constituent) 91-20-3	TWA/LMPE-PPT: 10 ppm TWA/LMPE-PPT: 50 mg/m ³ STEL/LMPE-CT: 15 ppm STEL/LMPE-CT: 75 mg/m ³
Quartz, crystalline silica 14808-60-7	TWA/LMPE-PPT: 0.1 mg/m ³ (respirable fraction)

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	Characteristic	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	52 °C / 125 °F	Setaflash closed cup
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	1.16	
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	Yes
Weight Per Gallon (lbs/gal)	9.69

VOC by weight % (less water)	VOC by volume % (less water)	VOC lbs/gal (less water)	VOC grams/liter (less water)
59.03	67.61	5.73	686.26

10. STABILITY AND REACTIVITY

Reactivity

No information available.

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

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
Naphtha (petroleum), heavy aromatic 64742-94-5	>5000 mg/kg (Rat)
Titanium dioxide 13463-67-7	>10000 mg/kg (Rat)
Gamma Butyrolactone 96-48-0	1540 mg/kg (Rat)
Diacetone alcohol 123-42-2	4 g/kg (Rat)
Cyclohexanone 108-94-1	800 mg/kg (Rat)
Naphthalene (constituent) 91-20-3	490 mg/kg (Rat)
1,2,4-Trimethylbenzene (constituent) 95-63-6	3400 mg/kg (Rat)
Quartz, crystalline silica 14808-60-7	500 mg/kg (Rat)

Component	LD50 Dermal
Naphtha (petroleum), heavy aromatic 64742-94-5	>2000 mg/kg (Rabbit)
Diacetone alcohol 123-42-2	13500 mg/kg (Rabbit)
Naphthalene (constituent) 91-20-3	>2500 mg/kg (Rat) >20 g/kg (Rabbit)
1,2,4-Trimethylbenzene (constituent) 95-63-6	>3160 mg/kg (Rabbit)

Component	Inhalation LC50
Naphtha (petroleum), heavy aromatic 64742-94-5	>590 mg/m ³ (Rat) 4 h
Gamma Butyrolactone 96-48-0	>2.68 mg/L (Rat) 4 h
Cyclohexanone 108-94-1	8000 ppm (Rat) 4 h 10.7 mg/L (Rat) 4 h
Naphthalene (constituent) 91-20-3	>340 mg/m ³ (Rat) 1 h
1,2,4-Trimethylbenzene (constituent) 95-63-6	18 g/m ³ (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	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH
Cyclohexanone 108-94-1	A3

Component	IARC
Titanium dioxide 13463-67-7	Group 2B
Crystalline silica (cristobalite) 14464-46-1	Group 1
Naphthalene (constituent) 91-20-3	Group 2B
Quartz, crystalline silica 14808-60-7	Group 1

Component	NTP
Naphthalene (constituent) 91-20-3	Reasonably Anticipated
Quartz, crystalline silica 14808-60-7	Known

Component	OSHA
Titanium dioxide 13463-67-7	X
Crystalline silica (cristobalite) 14464-46-1	X
Naphthalene (constituent) 91-20-3	X
Quartz, crystalline silica 14808-60-7	X

Numerical measures of toxicity - Product Information

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

ATEmix (oral)	4,068.00 mg/kg
ATEmix (dermal)	4,618.00 mg/kg
ATEmix (inhalation-dust/mist)	19.60 mg/l
ATEmix (inhalation-vapor)	144.00 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
Gamma Butyrolactone 96-48-0	72h EC50 <i>Desmodesmus subspicatus</i> : 360 mg/L 96h EC50 <i>Desmodesmus subspicatus</i> : 79 mg/L
Cyclohexanone 108-94-1	96h EC50 <i>Chlorella vulgaris</i> : 20 mg/L
Naphthalene (constituent) 91-20-3	72h EC50 <i>Skeletonema costatum</i> : 0.4 mg/L

Component	Fish
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Gamma Butyrolactone 96-48-0	96h LC50 Leuciscus idus: 220 - 460 mg/L [static]
Diacetone alcohol 123-42-2	96h LC50 Lepomis macrochirus: 420 mg/L 96h LC50 Lepomis macrochirus: 420 mg/L [static]
Cyclohexanone 108-94-1	96h LC50 Pimephales promelas: 481 - 578 mg/L [flow-through]
Naphthalene (constituent) 91-20-3	96h LC50 Oncorhynchus mykiss: 0.91 - 2.82 mg/L [static] 96h LC50 Pimephales promelas: 5.74 - 6.44 mg/L [flow-through] 96h LC50 Oncorhynchus mykiss: 1.6 mg/L [flow-through] 96h LC50 Pimephales promelas: 1.99 mg/L [static] 96h LC50 Lepomis macrochirus: 31.0265 mg/L [static]
1,2,4-Trimethylbenzene (constituent) 95-63-6	96h LC50 Pimephales promelas: 7.19 - 8.28 mg/L [flow-through]

Component	Crustacea
Gamma Butyrolactone 96-48-0	48h EC50 Daphnia magna Straus: >500 mg/L
Diacetone alcohol 123-42-2	24h EC50 Daphnia magna: 8750 mg/L
Cyclohexanone 108-94-1	24h EC50 Daphnia magna: 800 mg/L
Naphthalene (constituent) 91-20-3	48h EC50 Daphnia magna: 1.09 - 3.4 mg/L [static] 48h EC50 Daphnia magna: 1.96 mg/L [Flow through] 48h LC50 Daphnia magna: 2.16 mg/L
1,2,4-Trimethylbenzene (constituent) 95-63-6	48h EC50 Daphnia magna: 6.14 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

No information available.

Component	Partition coefficient
Naphtha (petroleum), heavy aromatic 64742-94-5	4.5
Gamma Butyrolactone 96-48-0	-0.566
Diacetone alcohol 123-42-2	1.03
Cyclohexanone 108-94-1	0.86
Naphthalene (constituent) 91-20-3	3.3
1,2,4-Trimethylbenzene (constituent) 95-63-6	3.63

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

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].
UN/ID no. UN1210
Proper Shipping Name Printing Ink
Hazard Class 3
Packing Group III

ICAO / IATA / IMDG / IMO

UN/ID no. UN1210
Proper Shipping Name Printing Ink
Hazard Class 3
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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 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
Naphthalene (constituent)	91-20-3	1 - 5	0.1

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

U.S. State Regulations

Component	Massachusetts Right To Know
Titanium dioxide 13463-67-7	X
Diacetone alcohol 123-42-2	X
Cyclohexanone 108-94-1	X
Crystalline silica (cristobalite) 14464-46-1	X
Naphthalene (constituent) 91-20-3	X
1,2,4-Trimethylbenzene (constituent) 95-63-6	X
Quartz, crystalline silica 14808-60-7	X

Component	Minnesota Right To Know
Titanium dioxide 13463-67-7	X
Diacetone alcohol 123-42-2	X
Cyclohexanone 108-94-1	X
Crystalline silica (cristobalite) 14464-46-1	X
Naphthalene (constituent) 91-20-3	X
1,2,4-Trimethylbenzene (constituent)	X

95-63-6	
Quartz, crystalline silica 14808-60-7	X

Component	New Jersey Right To Know
Titanium dioxide 13463-67-7	X
Diacetone alcohol 123-42-2	X
Cyclohexanone 108-94-1	X
Crystalline silica (cristobalite) 14464-46-1	X
Naphthalene (constituent) 91-20-3	X
1,2,4-Trimethylbenzene (constituent) 95-63-6	X
Quartz, crystalline silica 14808-60-7	X

Component	Pennsylvania Right To Know
Titanium dioxide 13463-67-7	X
Diacetone alcohol 123-42-2	X
Cyclohexanone 108-94-1	X
Crystalline silica (cristobalite) 14464-46-1	X
Naphthalene (constituent) 91-20-3	X
Inert Pigment	X
1,2,4-Trimethylbenzene (constituent) 95-63-6	X
Quartz, crystalline silica 14808-60-7	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
Naphthalene (constituent)	Carcinogen
Quartz, crystalline silica	Carcinogen

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

Canada

Component	NPRI - National Pollutant Release Inventory
Naphtha (petroleum), heavy aromatic 64742-94-5	Part 5, Other Groups and Mixtures 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
Gamma Butyrolactone 96-48-0	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
Diacetone alcohol 123-42-2	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
Cyclohexanone 108-94-1	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
Naphthalene (constituent)	Part 1, Group A Substance Part 4 Substance as set out in Section

91-20-3	65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999
1,2,4-Trimethylbenzene (constituent) 95-63-6	Part 1, Group A Substance Part 5, Individual Substances 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
	3 *	2	0	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 May-31-2015

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