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1

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

**Product identifier**

Product code **88360**  
Product name **Orange**  
Product category **8800 Series Color-Vue Membrane 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	
<a href="http://www.nazdar.com">www.nazdar.com</a>	

**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**

Skin Corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Aspiration toxicity	Category 1 - (H304)
Chronic aquatic toxicity	Category 3 - (H412)
Flammable liquids	Category 3 - (H226)

**Label elements**



**Signal Word**  
Danger

**Hazard Statements**

H304 - May be fatal if swallowed and enters airways  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation

H412 - Harmful to aquatic life with long lasting effects  
 H226 - Flammable liquid and vapor

**Precautionary Statements**

P331 - Do NOT induce vomiting  
 P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
 P273 - Avoid release to the environment

**Hazards not otherwise classified (HNOC)**

May be harmful if swallowed. May be harmful in contact with skin. Harmful to aquatic life.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Mixture**

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

\*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 (CO<sub>2</sub>). 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**

<b>Component</b>	<b>ACGIH TLV</b>
2-Butoxyethanol 111-76-2	TWA: 20 ppm
Naphthalene (constituent) 91-20-3	TWA: 10 ppm STEL: 15 ppm Skin
Titanium dioxide 13463-67-7	TWA: 10 mg/m <sup>3</sup>

<b>Component</b>	<b>OSHA PEL</b>
2-Butoxyethanol 111-76-2	TWA: 25 ppm TWA: 120 mg/m <sup>3</sup> TWA: 50 ppm TWA: 240 mg/m <sup>3</sup> Skin
Naphthalene (constituent) 91-20-3	TWA: 10 ppm TWA: 50 mg/m <sup>3</sup> STEL: 15 ppm STEL: 75 mg/m <sup>3</sup>
Titanium dioxide	TWA: 10 mg/m <sup>3</sup> (total dust)

13463-67-7	TWA: 15 mg/m <sup>3</sup> (total dust)
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Component	Ontario TWAEV
2-Butoxyethanol 111-76-2	TWA: 20 ppm
Naphthalene (constituent) 91-20-3	TWA: 10 ppm STEL: 15 ppm Skin
Titanium dioxide 13463-67-7	TWA: 10 mg/m <sup>3</sup> (total dust)
Ethylene glycol monopropyl ether 2807-30-9	TWA: 25 ppm TWA: 110 mg/m <sup>3</sup> Skin

Component	Mexico OEL (TWA)
2-Butoxyethanol 111-76-2	TWA/LMPE-PPT: 26 ppm TWA/LMPE-PPT: 120 mg/m <sup>3</sup> STEL/LMPE-CT: 75 ppm STEL/LMPE-CT: 360 mg/m <sup>3</sup>
Naphthalene (constituent) 91-20-3	TWA/LMPE-PPT: 10 ppm TWA/LMPE-PPT: 50 mg/m <sup>3</sup> STEL/LMPE-CT: 15 ppm STEL/LMPE-CT: 75 mg/m <sup>3</sup>
Titanium dioxide 13463-67-7	TWA/LMPE-PPT: 10 mg/m <sup>3</sup> (as Ti) STEL/LMPE-CT: 20 mg/m <sup>3</sup> (as Ti)

### 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

<b>Physical State</b>	Liquid	<b>Appearance</b>	Colored Liquid
<b>Odor</b>	Characteristic	<b>Odor Threshold</b>	No information available
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH</b>		No data available	
<b>Melting point/freezing point</b>		No data available	
<b>Boiling point/Boiling Range</b>	> 149 °C / 300 °F		
<b>Flash Point</b>	49 °C / 120 °F		Pensky Martens Closed Cup (PMCC)
<b>Evaporation rate</b>			No data available

<b>Flammability Limit in Air</b>		
Upper flammability limit		No data available
Lower flammability limit		No data available
<b>Vapor Pressure</b>		No data available
<b>Vapor Density</b>		No data available
<b>Specific Gravity</b>	1.08	
<b>Water Solubility</b>		No data available
<b>Solubility in other solvents</b>		No data available
<b>Partition coefficient: n-octanol/water</b>		No data available
<b>Autoignition Temperature</b>		No data available
<b>Decomposition temperature</b>		No data available
<b>Kinematic viscosity</b>		No data available
<b>Dynamic viscosity</b>		No data available
<b>Explosive Properties</b>	No data available	
<b>Oxidizing Properties</b>	No data available	

**Other Information**

<b>Photochemically Reactive</b>	Yes
<b>Weight Per Gallon (lbs/gal)</b>	9.02

VOC by weight % (less water)	VOC by volume % (less water)	VOC lbs/gal (less water)	VOC grams/liter (less water)
63.06	66.84	5.69	682.07

**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 (CO<sub>2</sub>). Carbon monoxide.

**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

<b>Inhalation</b>	There is no data for this product.
<b>Eye Contact</b>	There is no data for this product.
<b>Skin Contact</b>	There is no data for this product.
<b>Ingestion</b>	There is no data for this product.

Component	Oral LD50
Naphtha (petroleum), heavy aromatic 64742-94-5	>5000 mg/kg ( Rat )
Gamma Butyrolactone 96-48-0	1540 mg/kg ( Rat )
2-Butoxyethanol 111-76-2	470 mg/kg ( Rat )
Naphthalene (constituent)	490 mg/kg ( Rat )

91-20-3	
Titanium dioxide 13463-67-7	>10000 mg/kg ( Rat )
Ethylene glycol monopropyl ether 2807-30-9	3089 mg/kg ( Rat )
1,2,4-Trimethylbenzene (constituent) 95-63-6	3400 mg/kg ( Rat )

Component	LD50 Dermal
Naphtha (petroleum), heavy aromatic 64742-94-5	>2000 mg/kg ( Rabbit )
2-Butoxyethanol 111-76-2	2270 mg/kg ( Rat ) 220 mg/kg ( Rabbit )
Naphthalene (constituent) 91-20-3	>2500 mg/kg ( Rat ) >20 g/kg ( Rabbit )
Ethylene glycol monopropyl ether 2807-30-9	960 µL/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 <sup>3</sup> ( Rat ) 4 h
Gamma Butyrolactone 96-48-0	>2.68 mg/L ( Rat ) 4 h
2-Butoxyethanol 111-76-2	2.21 mg/L ( Rat ) 4 h 450 ppm ( Rat ) 4 h
Naphthalene (constituent) 91-20-3	>340 mg/m <sup>3</sup> ( Rat ) 1 h
1,2,4-Trimethylbenzene (constituent) 95-63-6	18 g/m <sup>3</sup> ( 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
2-Butoxyethanol 111-76-2	A3

Component	IARC
Naphthalene (constituent) 91-20-3	Group 2B
Titanium dioxide 13463-67-7	Group 2B

Component	NTP
Naphthalene (constituent) 91-20-3	Reasonably Anticipated

Component	OSHA
Naphthalene (constituent)	X

91-20-3	
Titanium dioxide 13463-67-7	X

### Numerical measures of toxicity - Product Information

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

ATEmix (oral)	2,896.00 mg/kg
ATEmix (dermal)	3,660.00 mg/kg
ATEmix (inhalation-dust/mist)	29.53 mg/l
ATEmix (inhalation-vapor)	147.00 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 Desmodesmus subspicatus: 360 mg/L 96h EC50 Desmodesmus subspicatus: 79 mg/L
Naphthalene (constituent) 91-20-3	72h EC50 Skeletonema costatum: 0.4 mg/L

Component	Fish
Gamma Butyrolactone 96-48-0	96h LC50 Leuciscus idus: 220 - 460 mg/L [static]
2-Butoxyethanol 111-76-2	96h LC50 Lepomis macrochirus: 1490 mg/L [static] 96h LC50 Lepomis macrochirus: 2950 mg/L
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
2-Butoxyethanol 111-76-2	24h EC50 Daphnia magna: 1698 - 1940 mg/L 48h EC50 Daphnia magna: >1000 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
2-Butoxyethanol 111-76-2	0.81
Naphthalene (constituent)	3.3

91-20-3	
1,2,4-Trimethylbenzene (constituent)	3.63
95-63-6	

**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  
**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 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	5 - 10	1.0
Naphthalene (constituent)	91-20-3	1 - 5	0.1
Ethylene glycol monopropyl ether	2807-30-9	1 - 5	1.0

**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
Ethylene glycol monopropyl ether	2807-30-9	1 - 5

**U.S. State Regulations**

Component	Massachusetts Right To Know
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2-Butoxyethanol 111-76-2	X
Naphthalene (constituent) 91-20-3	X
Titanium dioxide 13463-67-7	X
1,2,4-Trimethylbenzene (constituent) 95-63-6	X

Component	Minnesota Right To Know
2-Butoxyethanol 111-76-2	X
Naphthalene (constituent) 91-20-3	X
Titanium dioxide 13463-67-7	X
1,2,4-Trimethylbenzene (constituent) 95-63-6	X

Component	New Jersey Right To Know
2-Butoxyethanol 111-76-2	X
Naphthalene (constituent) 91-20-3	X
Titanium dioxide 13463-67-7	X
Ethylene glycol monopropyl ether 2807-30-9	X
1,2,4-Trimethylbenzene (constituent) 95-63-6	X

Component	Pennsylvania Right To Know
2-Butoxyethanol 111-76-2	X
Naphthalene (constituent) 91-20-3	X
Titanium dioxide 13463-67-7	X
Ethylene glycol monopropyl ether 2807-30-9	X
1,2,4-Trimethylbenzene (constituent) 95-63-6	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
Naphthalene (constituent)	Carcinogen
Titanium dioxide	Carcinogen

*This product contains titanium dioxide in a non-respirable form. Inhalation of titanium dioxide 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
2-Butoxyethanol 111-76-2	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

Naphthalene (constituent) 91-20-3	Part 1, Group A Substance 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
Ethylene glycol monopropyl ether 2807-30-9	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
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

<b>HMIS:</b>	<b>Health</b>	<b>Flammability</b>	<b>Reactivity</b>	<b>Personal Protection</b>
	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-30-2015

#### **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**