

Print Date  
May-30-2015

Revision Date  
May-30-2015

Revision Number  
1

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

**Product identifier**

Product code **4050**  
Product name **Barrier White**  
Product category **4000 Series UV 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**

Acute toxicity - Oral	Not classified
Acute toxicity - Dermal	Not classified
Acute toxicity - Inhalation (Gases)	Not classified
Acute toxicity - Inhalation (Vapors)	Not classified
Acute toxicity - Inhalation (Dusts/Mists)	Not classified
Skin Corrosion/irritation	Not classified
Serious eye damage/eye irritation	Category 2 - (H319)
Respiratory sensitization	Not classified
Skin sensitization	Category 1B - (H317)
Germ Cell Mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Category 1 - (H372)
Aspiration toxicity	Not classified
Acute aquatic toxicity	Not classified for acute
Chronic aquatic toxicity	Not classified chronic
Ozone	Not classified

**Label elements**



**Signal Word**  
Danger

P280 - Wear eye protection/ face protection  
P321 - Specific treatment (see .? on this label)  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray

**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
Titanium dioxide	13463-67-7	30 - 60	*	
Glycol Ether Acrylate	Trade Secret	10 - 30	*	
Vinyl Functional Monomer	Trade Secret	10 - 30	*	
Acrylated Monomer	Trade Secret	1 - 5	*	
Photoinitiator	Trade Secret	1 - 5	*	
Silicon Dioxide	7631-86-9	1 - 5	*	
Aluminum hydroxide	21645-51-2	1 - 5	*	
Photoinitiator	Trade Secret	1 - 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 (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**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

<b>Component</b>	<b>ACGIH TLV</b>
Titanium dioxide 13463-67-7	TWA: 10 mg/m <sup>3</sup>

<b>Component</b>	<b>OSHA PEL</b>
Titanium dioxide 13463-67-7	TWA: 10 mg/m <sup>3</sup> (total dust) TWA: 15 mg/m <sup>3</sup> (total dust)
Silicon Dioxide 7631-86-9	TWA: 6 mg/m <sup>3</sup>

Component	Ontario TWAEV
Titanium dioxide 13463-67-7	TWA: 10 mg/m <sup>3</sup> (total dust)

  

Component	Mexico OEL (TWA)
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>	Mild Sweet Acrylic	<b>Odor Threshold</b>	No information available
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
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	1.59		
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	
<b>Explosive Properties</b>	No data available		
<b>Oxidizing Properties</b>	No data available		

### Other Information

Photochemically Reactive No  
 Weight Per Gallon (lbs/gal) 13.232

VOC by weight % (less water)	VOC by volume % (less water)	VOC lbs/gal (less water)	VOC grams/liter (less water)
0.49	0.83	0.06	7.7

## 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
Titanium dioxide 13463-67-7	>10000 mg/kg ( Rat )
Glycol Ether Acrylate	4660 µL/kg ( Rat )
Acrylated Monomer	4890 mg/kg ( Rat )
Silicon Dioxide 7631-86-9	>5000 mg/kg ( Rat )
Aluminum hydroxide 21645-51-2	>5000 mg/kg ( Rat )

Component	LD50 Dermal
Glycol Ether Acrylate	2540 µL/kg ( Rabbit )
Acrylated Monomer	>5 g/kg ( Rabbit )
Silicon Dioxide 7631-86-9	>2000 mg/kg ( Rabbit )

Component	Inhalation LC50
Silicon Dioxide 7631-86-9	>2.2 mg/L ( Rat ) 1 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**

<b>Skin corrosion/irritation</b>	There is no data for this product.
<b>Eye damage/irritation</b>	There is no data for this product.
<b>Irritation</b>	There is no data for this product.
<b>Corrosivity</b>	There is no data for this product.
<b>Sensitisation</b>	There is no data for this product.
<b>Mutagenic Effects</b>	There is no data for this product.
<b>Reproductive Effects</b>	There is no data for this product.
<b>STOT - single exposure</b>	There is no data for this product.
<b>STOT - repeated exposure</b>	There is no data for this product.
<b>Chronic Toxicity</b>	There is no data for this product.
<b>Aspiration hazard</b>	There is no data for this product.
<b>Carcinogenicity</b>	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Component	IARC
Titanium dioxide 13463-67-7	Group 2B

Component	OSHA
Titanium dioxide 13463-67-7	X

**Numerical measures of toxicity - Product Information**

**Unknown Aquatic 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

<b>ATEmix (oral)</b>	2,773.00 mg/kg
<b>ATEmix (dermal)</b>	6,959.00 mg/kg
<b>ATEmix (inhalation-gas)</b>	99,999.00 mg/l
<b>ATEmix (inhalation-dust/mist)</b>	99,999.00 mg/l
<b>ATEmix (inhalation-vapor)</b>	99,999.00 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
Silicon Dioxide 7631-86-9	72h EC50 Pseudokirchneriella subcapitata: 440 mg/L

Component	Fish
Silicon Dioxide 7631-86-9	96h LC50 Brachydanio rerio: 5000 mg/L [static]

Component	Crustacea
Silicon Dioxide 7631-86-9	48h EC50 Ceriodaphnia dubia: 7600 mg/L

**Persistence and Degradability**

No information available.

**Bioaccumulation**

No information available.

**Other adverse effects**

No information available

**Ozone**

Not applicable

**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**

Not determined

**ICAO / IATA / IMDG / IMO**

Not determined

**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.

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Glycol Ether Acrylate	Trade Secret	10 - 30	1.0

**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).

Component	CAS-No	Weight %
Glycol Ether Acrylate	Trade Secret	10 - 30

**U.S. State Regulations**

Component	Massachusetts Right To Know
Titanium dioxide 13463-67-7	X
Silicon Dioxide 7631-86-9	X

Component	Minnesota Right To Know
Titanium dioxide 13463-67-7	X
Silicon Dioxide 7631-86-9	X

Component	New Jersey Right To Know
Titanium dioxide 13463-67-7	X
Glycol Ether Acrylate	X

Silicon Dioxide 7631-86-9	X
<b>Component</b>	<b>Pennsylvania Right To Know</b>
Titanium dioxide 13463-67-7	X
Glycol Ether Acrylate	X
Silicon Dioxide 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

<b>Component</b>	<b>California Prop. 65</b>
Titanium dioxide	Carcinogen

**Canada**

No information available

## 16. OTHER INFORMATION

<b>HMIS:</b>	<b>Health</b>	<b>Flammability</b>	<b>Reactivity</b>	<b>Personal Protection</b>
	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** 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**