

Print Date
Jun-01-2015

Revision Date
May-31-2015

Revision Number
1

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

Product identifier

Product code **S2LF12**
Product name **Medium Yellow**
Product category **System 2 (S2) Series Gloss 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

| | |
|---|---------------------|
| Acute toxicity - Inhalation (Dusts/Mists) | Category 4 - (H332) |
| Serious eye damage/eye irritation | Category 2 - (H319) |
| Flammable liquids | Category 3 - (H226) |

Label elements



Signal Word
Warning

Hazard Statements

H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H226 - Flammable liquid and vapor

Precautionary Statements

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 |
|---------------------------------------|------------|----------|--------------|------|
| Ethylene glycol monopropyl ether | 2807-30-9 | 30 - 60 | * | |
| Cyclohexanone | 108-94-1 | 10 - 30 | * | |
| Diethylene Glycol Ethyl Ether Acetate | 112-15-2 | 1 - 5 | * | |
| Titanium dioxide | 13463-67-7 | 1 - 5 | * | |
| Ethyl alcohol | 64-17-5 | < 0.5 | * | |

*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 (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 |
|--------------------------------|-------------------------------------|
| Cyclohexanone 108-94-1 | TWA: 20 ppm STEL: 50 ppm Skin |
| Titanium dioxide 13463-67-7 | TWA: 10 mg/m ³ |
| Ethyl alcohol 64-17-5 | STEL: 1000 ppm |

| Component | OSHA PEL |
|--------------------------------|--|
| Cyclohexanone 108-94-1 | TWA: 25 ppm TWA: 100 mg/m ³ TWA: 50 ppm TWA: 200 mg/m ³ Skin |
| Titanium dioxide 13463-67-7 | TWA: 10 mg/m ³ (total dust) TWA: 15 mg/m ³ (total dust) |
| Ethyl alcohol 64-17-5 | TWA: 1000 ppm TWA: 1900 mg/m ³ |

| Component | Ontario TWAEV |
|---|---|
| Ethylene glycol monopropyl ether 2807-30-9 | TWA: 25 ppm TWA: 110 mg/m ³ Skin |
| Cyclohexanone 108-94-1 | TWA: 20 ppm STEL: 50 ppm Skin |
| Titanium dioxide | TWA: 10 mg/m ³ (total dust) |

| | |
|--------------------------------|---|
| 13463-67-7 | |
| Ethyl alcohol 64-17-5 | STEL: 1000 ppm |
| Component | Mexico OEL (TWA) |
| 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 |
| Titanium dioxide 13463-67-7 | TWA/LMPE-PPT: 10 mg/m ³ (as Ti) STEL/LMPE-CT: 20 mg/m ³ (as Ti) |
| Ethyl alcohol 64-17-5 | TWA/LMPE-PPT: 1000 ppm TWA/LMPE-PPT: 1900 mg/m ³ |

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 |
| Property | Values | Remarks • Method | |
| pH | | No data available | |
| Melting point/freezing point | | No data available | |
| Boiling point/Boiling Range | > 149 °C / 300 °F | | |
| Flash Point | 46 °C / 115 °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 | 1.07 | | |
| 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 No
Weight Per Gallon (lbs/gal) 8.92

| VOC by weight % (less water) | VOC by volume % (less water) | VOC lbs/gal (less water) | VOC grams/liter (less water) |
|---------------------------------|---------------------------------|-----------------------------|---------------------------------|
| 55.67 | 58.3 | 4.97 | 595.84 |

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 |
|---|----------------------|
| Ethylene glycol monopropyl ether 2807-30-9 | 3089 mg/kg (Rat) |
| Cyclohexanone 108-94-1 | 800 mg/kg (Rat) |
| Diethylene Glycol Ethyl Ether Acetate 112-15-2 | 11 g/kg (Rat) |
| Titanium dioxide 13463-67-7 | >10000 mg/kg (Rat) |
| Ethyl alcohol 64-17-5 | 7060 mg/kg (Rat) |

| Component | LD50 Dermal |
|---|------------------------|
| Ethylene glycol monopropyl ether 2807-30-9 | 960 µL/kg (Rabbit) |
| Diethylene Glycol Ethyl Ether Acetate 112-15-2 | 15100 µL/kg (Rabbit) |

| Component | Inhalation LC50 |
|---------------------------|---|
| Cyclohexanone 108-94-1 | 8000 ppm (Rat) 4 h 10.7 mg/L (Rat) 4 h |
| Ethyl alcohol | 124.7 mg/L (Rat) 4 h |

| | |
|---------|--|
| 64-17-5 | |
|---------|--|

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 |

| Component | OSHA |
|--------------------------------|------|
| 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) | 2,699.00 mg/kg |
| ATEmix (dermal) | 2,577.00 mg/kg |
| ATEmix (inhalation-dust/mist) | 7.10 mg/l |
| ATEmix (inhalation-vapor) | 52.00 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 |
|---------------------------|--|
| Cyclohexanone 108-94-1 | 96h EC50 <i>Chlorella vulgaris</i> : 20 mg/L |

| Component | Fish |
|---------------------------|--|
| Cyclohexanone 108-94-1 | 96h LC50 <i>Pimephales promelas</i> : 481 - 578 mg/L [flow-through] |
| Ethyl alcohol 64-17-5 | 96h LC50 <i>Oncorhynchus mykiss</i> : 12.0 - 16.0 mL/L [static] 96h LC50 <i>Pimephales promelas</i> : 13400 - 15100 mg/L [flow-through] 96h LC50 <i>Pimephales promelas</i> : >100 mg/L [static] |

| Component | Crustacea |
|---------------|--|
| Cyclohexanone | 24h EC50 <i>Daphnia magna</i> : 800 mg/L |

| | |
|--------------------------|---|
| 108-94-1 | |
| Ethyl alcohol 64-17-5 | 48h LC50 Daphnia magna: 9268 - 14221 mg/L 24h EC50 Daphnia magna: 10800 mg/L |

Persistence and Degradability

No information available.

Bioaccumulation

No information available.

| Component | Partition coefficient |
|---------------------------|-----------------------|
| Cyclohexanone 108-94-1 | 0.86 |
| Ethyl alcohol 64-17-5 | -0.32 |

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 |
|---------------------------------------|-----------|----------|-----------------------------|
| Ethylene glycol monopropyl ether | 2807-30-9 | 30 - 60 | 1.0 |
| Diethylene Glycol Ethyl Ether Acetate | 112-15-2 | 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 % |
|---------------------------------------|-----------|----------|
| Ethylene glycol monopropyl ether | 2807-30-9 | 30 - 60 |
| Diethylene Glycol Ethyl Ether Acetate | 112-15-2 | 1 - 5 |

U.S. State Regulations

| Component | Massachusetts Right To Know |
|--------------------------------|--------------------------------|
| Cyclohexanone 108-94-1 | X |
| Titanium dioxide 13463-67-7 | X |
| Ethyl alcohol 64-17-5 | X |

| Component | Minnesota Right To Know |
|--------------------------------|----------------------------|
| Cyclohexanone 108-94-1 | X |
| Titanium dioxide 13463-67-7 | X |
| Ethyl alcohol 64-17-5 | X |

| Component | New Jersey Right To Know |
|---|-----------------------------|
| Ethylene glycol monopropyl ether 2807-30-9 | X |
| Cyclohexanone 108-94-1 | X |
| Diethylene Glycol Ethyl Ether Acetate 112-15-2 | X |
| Titanium dioxide 13463-67-7 | X |
| Ethyl alcohol 64-17-5 | X |

| Component | Pennsylvania Right To Know |
|---|-------------------------------|
| Ethylene glycol monopropyl ether 2807-30-9 | X |
| Cyclohexanone 108-94-1 | X |
| Diethylene Glycol Ethyl Ether Acetate 112-15-2 | X |
| Titanium dioxide 13463-67-7 | X |
| Ethyl alcohol 64-17-5 | 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 |

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 |
|---|--|
| 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 |

| | |
|---|--|
| 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 |
| Diethylene Glycol Ethyl Ether Acetate 112-15-2 | 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 |
| Ethyl alcohol 64-17-5 | 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 |
| | 2 * | 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