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1. IDENTIFICATION

Product identifier

Product code **97HTR**
Product name **Halftone Red**
Product category **9700 Series SV Screen Ink**

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Industrial 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: +001-913-422-1888 | Stockport, England SK4 3EG |
| Tel: +001-800-677-4657 | Tel: +44 161 442 2111 |
| Fax: +001-913-422-2294 | |
| www.nazdar.com | |

Emergency telephone number

USA: Chemtrec: +001-800-424-9300
Outside USA: Chemtrec: +001-703-527-3887
24 Hour Emergency Phone Number

2. HAZARDS IDENTIFICATION

Classification

| | |
|---|---------------------|
| Acute toxicity - Inhalation (Vapors) | Category 3 - (H331) |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 3 - (H331) |
| Skin corrosion/irritation | Category 2 - (H315) |
| Serious eye damage/eye irritation | Category 2 - (H319) |
| Skin sensitization | Category 1 - (H317) |

Label elements



Signal word
Danger

Hazard statements

H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation

H331 - Toxic if inhaled

Precautionary Statements

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves and eye/face protection

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P311 - Call a POISON CENTER or doctor

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Hazards not otherwise classified (HNOC)

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

| Chemical name | CAS No. | Weight-% | Trade secret | Note |
|---|---------------|-----------|--------------|------|
| 2-Butoxyethanol | 111-76-2 | 30 - 60 | * | |
| Ethylene glycol monobutyl ether acetate | 112-07-2 | 10 - 30 | * | |
| Resin | Not Available | 1 - 5 | * | |
| Additive | Not Available | 0.1 - < 1 | * | |

*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**

| Chemical name | ACGIH TLV |
|---|-------------|
| 2-Butoxyethanol 111-76-2 | TWA: 20 ppm |
| Ethylene glycol monobutyl ether acetate 112-07-2 | TWA: 20 ppm |

| Chemical name | OSHA PEL |
|-----------------------------|---|
| 2-Butoxyethanol 111-76-2 | TWA: 50 ppm TWA: 240 mg/m ³ Skin |

| Chemical name | OSHA PEL (vacated) |
|-----------------------------|---|
| 2-Butoxyethanol 111-76-2 | TWA: 25 ppm TWA: 120 mg/m ³ Skin |

| Chemical name | Ontario TWA EV |
|-----------------|----------------|
| 2-Butoxyethanol | TWA: 20 ppm |

| | |
|---|-------------|
| 111-76-2 | |
| Ethylene glycol monobutyl ether acetate | TWA: 20 ppm |
| 112-07-2 | |

| Chemical name | Mexico OEL (TWA) |
|---|---------------------|
| 2-Butoxyethanol 111-76-2 | TWA/VLE-PPT: 20 ppm |
| Ethylene glycol monobutyl ether acetate 112-07-2 | TWA/VLE-PPT: 20 ppm |

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.

Hand Protection

Chemical resistant protective gloves.
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding >480 minutes of permeation time): eg. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers. Taking into account the varying conditions, the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Due to different glove types, the manufacturer's directions for use should be observed. Replace gloves immediately when torn or any change in appearance is noticed such as dimension, color, flexibility.

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. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material.

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 |
| Odor | Characteristic | Odor Threshold | No information available |
| Property | Values | Remarks • Method | |
| pH | | No data available | |
| Melting Point / Freezing Point | No information available | No data available | |
| Boiling Point / Boiling Range | > 149 °C / 300 °F | | |
| Flash Point | 62 °C / 143 °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 | 1.01 | |
| Water Solubility | | No data available |
| Solubility in other solvents | | No data available |
| Partition coefficient: n-octanol/water | | No data available |
| Autoignition Temperature | No information available | No data available |
| Hyphen | | 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) 8.41

| VOC by weight % (less water) | VOC by volume % (less water) | VOC lbs/gal (less water) | VOC grams/liter (less water) |
|---------------------------------|---------------------------------|-----------------------------|---------------------------------|
| 67.53 | No information available | 5.68 | 680.48 |

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 | Specific test data for the substance or mixture is not available. Toxic if inhaled. (based on components). |
| Eye Contact | Specific test data for the substance or mixture is not available. |
| Skin Contact | Specific test data for the substance or mixture is not available. |
| Ingestion | Specific test data for the substance or mixture is not available. |

| Chemical name | Oral LD50 |
|---|----------------------|
| 2-Butoxyethanol 111-76-2 | = 470 mg/kg (Rat) |
| Ethylene glycol monobutyl ether acetate | = 2400 mg/kg (Rat) |

| | |
|---|--|
| 112-07-2 | |
| Chemical name | Dermal LD50 |
| 2-Butoxyethanol 111-76-2 | = 435 mg/kg (Rabbit) |
| Ethylene glycol monobutyl ether acetate 112-07-2 | = 1500 mg/kg (Rabbit) |
| Resin | > 2000 mg/kg (Rat) |
| Chemical name | Inhalation LC50 |
| 2-Butoxyethanol 111-76-2 | = 450 ppm (Rat) 4 h = 486 ppm (Rat) 4 h |
| Ethylene glycol monobutyl ether acetate 112-07-2 | > 400 ppm (Rat) 4 h |

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Specific test data for the substance or mixture is not available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Specific test data for the substance or mixture is not available. Causes skin irritation (pain, redness and swelling). (based on components).

Eye damage/irritation Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components).

Irritation Specific test data for the substance or mixture is not available.

Corrosivity Specific test data for the substance or mixture is not available.

Sensitization Specific test data for the substance or mixture is not available. May cause an allergic skin reaction. (based on components).

Mutagenic Effects Specific test data for the substance or mixture is not available.

Carcinogenic effects Specific test data for the substance or mixture is not available.

Reproductive Effects Specific test data for the substance or mixture is not available.

STOT - single exposure Specific test data for the substance or mixture is not available.

STOT - repeated exposure Specific test data for the substance or mixture is not available.

Chronic Toxicity Specific test data for the substance or mixture is not available.

Aspiration hazard Specific test data for the substance or mixture is not available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Chemical name | ACGIH |
|---|-------|
| 2-Butoxyethanol 111-76-2 | A3 |
| Ethylene glycol monobutyl ether acetate 112-07-2 | A3 |

Numerical measures of toxicity - Product Information

Unknown acute 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

| | |
|-------------------------------|-----------------|
| ATEmix (oral) | 903.80 mg/kg |
| ATEmix (dermal) | 10,080.60 mg/kg |
| ATEmix (inhalation-gas) | 99,999.00 |
| ATEmix (inhalation-dust/mist) | 0.879 mg/l |
| ATEmix (inhalation-vapor) | 5.35 mg/l |

12. ECOLOGICAL INFORMATION

Ecotoxicity

Specific test data for the substance or mixture is not available.

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

| Chemical name | Algae/aquatic plants |
|---|--|
| Ethylene glycol monobutyl ether acetate 112-07-2 | 72h EC50 Desmodesmus subspicatus: > 500 mg/L |

| Chemical name | Fish |
|---|---|
| 2-Butoxyethanol 111-76-2 | 96h LC50 Lepomis macrochirus: = 1490 mg/L (static) 96h LC50 Lepomis macrochirus: = 2950 mg/L |
| Ethylene glycol monobutyl ether acetate 112-07-2 | 96h LC50 Oncorhynchus mykiss: 20 - 40 mg/L |
| Resin | 96h LC50 Oncorhynchus mykiss: = 11.5 mg/L (static) |

| Chemical name | Crustacea |
|---|-------------------------------------|
| 2-Butoxyethanol 111-76-2 | 48h EC50 Daphnia magna: > 1000 mg/L |
| Ethylene glycol monobutyl ether acetate 112-07-2 | 48h EC50 Daphnia magna: = 37 mg/L |

Persistence and Degradability

No information available.

Bioaccumulation

| Chemical name | Partition coefficient |
|---|-----------------------|
| 2-Butoxyethanol 111-76-2 | 0.81 |
| Ethylene glycol monobutyl ether acetate 112-07-2 | 1.51 |

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

Note:

This information is not intended to convey all specific transportation requirements relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation information can be found in the specific regulations for your mode of transportation. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

DOT

| | |
|-----------------------------------|---|
| UN/ID no | UN2810 |
| Proper Shipping Name | Toxic Liquid, Organic, N.O.S. (2-Butoxyethanol) |
| Transport hazard class(es) | 6.1 |
| Packing Group | III |

ICAO / IATA / IMDG / IMO

| | |
|-----------------------------------|---|
| UN/ID no | UN2810 |
| Proper Shipping Name | Toxic Liquid, Organic, N.O.S. (2-Butoxyethanol) |
| Transport hazard class(es) | 6.1 |
| Packing Group | III |

15. REGULATORY INFORMATION**International Inventories**

All substances are listed as ACTIVE 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.

| Chemical name | CAS No. | Weight-% | SARA 313 - Threshold Values % |
|---|----------|----------|-------------------------------|
| 2-Butoxyethanol | 111-76-2 | 30 - 60 | 1.0 |
| Ethylene glycol monobutyl ether acetate | 112-07-2 | 10 - 30 | 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:.

| Chemical name | CAS No. | Weight-% |
|---|----------|----------|
| Ethylene glycol monobutyl ether acetate | 112-07-2 | 10 - 30 |

US State Regulations

| Chemical name | Massachusetts |
|-----------------------------|---------------|
| 2-Butoxyethanol 111-76-2 | X |

| Chemical name | Minnesota Right To Know |
|-----------------------------|----------------------------|
| 2-Butoxyethanol 111-76-2 | X |

| Chemical name | New Jersey |
|---|------------|
| 2-Butoxyethanol 111-76-2 | X |
| Ethylene glycol monobutyl ether acetate 112-07-2 | X |

| Chemical name | Pennsylvania |
|---|--------------|
| 2-Butoxyethanol 111-76-2 | X |
| Ethylene glycol monobutyl ether acetate 112-07-2 | X |

California Proposition 65

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects

Canada

| Chemical name | NPRI - National Pollutant Release Inventory |
|-----------------------------|--|
| 2-Butoxyethanol 111-76-2 | Part 1, Group A Substance Part 5 Substance - Volatile Organic Compounds with Additional |

| | |
|---|--|
| | Reporting Requirements Part 4 Substance - Criteria Air Contaminants |
| Ethylene glycol monobutyl ether acetate 112-07-2 | Part 5 Substance - Volatile Organic Compounds with Additional Reporting Requirements Part 4 Substance - Criteria Air Contaminants |

16. OTHER INFORMATION

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
Group 3 - Not Classifiable as to Carcinogenicity in Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen
Reasonably Anticipated to be a Human Carcinogen

OSHA: (Occupational Safety & Health Administration)

X - Present

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Pursuant to NOM-018-STPS-2015

This information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

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 Safety Data Sheet