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

Product identifier

Product code **3894**
 Product name **Halftone Black**
 Product category **3800 Series UV Polybanner 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

Skin Corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Skin sensitization	Category 1A - (H317)
Chronic aquatic toxicity	Category 2 - (H411)

Label elements



Signal Word

Warning

Hazard Statements

H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H319 - Causes serious eye irritation
 H411 - Toxic to aquatic life with long lasting effects
 EUH208 - May produce an allergic reaction

Precautionary Statements

P264 - Wash face, hands and any exposed skin thoroughly after handling

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337 + P313 - If eye irritation persists: Get medical advice/attention

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

P272 - Contaminated work clothing should not be allowed out of the workplace

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

P273 - Avoid release to the environment

P280 - Wear protective gloves/protective clothing/eye protection/face protection

Hazards not otherwise classified (HNOC)

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Mixture**

Component	CAS-No	Weight %	Trade Secret	Note
Glycol Ether Acrylate	Trade Secret	30 - 60	*	
Acrylated Oligomer	Trade Secret	10 - 30	*	
Photoinitiator	Trade Secret	1 - 5	*	
Carbon black	1333-86-4	1 - 5	*	
Acrylated Oligomer	Trade Secret	< 1	*	
Acrylated Monomer	Trade Secret	< 1	*	
Xylenes (o-, m-, p- isomers)	1330-20-7	< 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. Hazardous polymerization may take place during a fire due to heat. Closed containers could violently rupture.

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 at temperatures between 18°-32°C (65°-90°F). Keep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep out of the reach of children. Protect from direct sunlight. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible Products

Strong acids. Strong bases. Strong oxidizing agents. Reducing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**Exposure limits**

Component	ACGIH TLV
Carbon black 1333-86-4	TWA: 3 mg/m ³ inhalable particulate matter
Xylenes (o-, m-, p- isomers) 1330-20-7	TWA: 100 ppm STEL: 150 ppm

Component	OSHA PEL
Carbon black 1333-86-4	TWA: 3.5 mg/m ³
Xylenes (o-, m-, p- isomers) 1330-20-7	TWA: 100 ppm TWA: 435 mg/m ³

Component	OSHA PEL (vacated)
Carbon black 1333-86-4	TWA: 3.5 mg/m ³
Xylenes (o-, m-, p- isomers)	TWA: 100 ppm

1330-20-7	TWA: 435 mg/m ³ STEL: 150 ppm STEL: 655 mg/m ³
Component	Ontario TWAEV
Carbon black 1333-86-4	TWA: 3 mg/m ³ inhalable
Xylenes (o-, m-, p- isomers) 1330-20-7	TWA: 100 ppm STEL: 150 ppm
Component	Mexico OEL (TWA)
Carbon black 1333-86-4	TWA/VLE-PPT: 3.5 mg/m ³ STEL/PPT-CT: 7 mg/m ³
Xylenes (o-, m-, p- isomers) 1330-20-7	TWA/VLE-PPT: 100 ppm TWA/VLE-PPT: 435 mg/m ³ STEL/PPT-CT: 150 ppm STEL/PPT-CT: 655 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	Viscous liquid
Odor	Sweet Mild Acrylic	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	> 94 °C / > 201 °F		
Evaporation rate		Pensky Martens Closed Cup (PMCC)	
Flammability Limit in Air		No data available	
Upper flammability limit		No data available	
Lower flammability limit		No data available	
Vapor Pressure		No data available	
Vapor Density		No data available	
Specific Gravity	1.19		
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)	9.9

VOC by weight % (less water)	VOC by volume % (less water)	VOC lbs/gal (less water)	VOC grams/liter (less water)
0-1	No information available	0-1	6.61

10. STABILITY AND REACTIVITY**Reactivity**

No information available.

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

None under normal processing. Do not store for longer periods at temperatures above 93°C (200°F).

Conditions to avoid

Temperatures above 93 °C / 200 °F. Protect from direct sunlight. 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
Glycol Ether Acrylate	= 4660 µL/kg (Rat)
Carbon black 1333-86-4	> 15400 mg/kg (Rat)
Acrylated Monomer	= 5 g/kg (Rat)
Xylenes (o-, m-, p- isomers) 1330-20-7	= 3500 mg/kg (Rat)

Component	LD50 Dermal
Xylenes (o-, m-, p- isomers) 1330-20-7	> 4350 mg/kg (Rabbit)

Component	Inhalation LC50
Xylenes (o-, m-, p- isomers)	= 29.08 mg/L (Rat) 4 h

1330-20-7	
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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
Carbon black 1333-86-4	A3

Component	IARC
Carbon black 1333-86-4	Group 2B

Component	OSHA
Carbon black 1333-86-4	X

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)	13,737.00 mg/kg
ATEmix (dermal)	41,703.00 mg/kg
ATEmix (inhalation-dust/mist)	69.64 mg/l
ATEmix (inhalation-vapor)	417.00 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

None known

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

Component	Fish
Acrylated Oligomer	1.9: 96 h Pimephales promelas mg/L LC50 flow-through
Xylenes (o-, m-, p- isomers) 1330-20-7	13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 19: 96 h Lepomis macrochirus mg/L LC50 780: 96 h Cyprinus carpio mg/L LC50 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 13.4: 96 h Pimephales promelas mg/L LC50 flow-through 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static

	7.711 - 9.591: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 780: 96 h <i>Cyprinus carpio</i> mg/L LC50 semi-static
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Component	Crustacea
Xylenes (o-, m-, p- isomers) 1330-20-7	3.82: 48 h water flea mg/L EC50 0.6: 48 h <i>Gammarus lacustris</i> mg/L LC50

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Component	Partition coefficient
Xylenes (o-, m-, p- isomers) 1330-20-7	2.77 - 3.15

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

Not regulated

Exception: In the US and Canada except when all or part of the transportation is by vessel, containers 119 gallons/ 450 Liters and less are not regulated [see 49CFR 171.4 (c)(1)]
If in containers of 5L or less for liquids or 5KG or less for solids these items may be shipped as not regulated [additional general packaging requirements must be met see 49CFR 173.24] [see 49CFR 171.4 (c)(2)]

ICAO / IATA / IMDG / IMO

Not Regulated

Exception: If in containers of 5L or less for liquids or 5KG or less for solids these items may be shipped as not regulated [additional general packaging requirements must be met see ICAO/IATA special provision A197]

Exception: If in containers of 5L or less for liquids or 5KG or less for solids these items may be shipped as not regulated [additional general packaging requirements must be met see IMDG code 2.10.2.7]

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
Glycol Ether Acrylate	Trade Secret	30 - 60	1.0

The above glycol ether acrylate is considered a reactive chemical in ultraviolet curable inks. Once initiated by a high dose of ultraviolet light, this glycol ether acrylate rapidly polymerizes (i.e. hardens) and becomes part of the ink film. The polymerization process of UV curable inks is measured in milliseconds.

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 %
Glycol Ether Acrylate	Trade Secret	30 - 60

U.S. State Regulations

Component	Massachusetts Right To Know
Carbon black 1333-86-4	X
Xylenes (o-, m-, p- isomers) 1330-20-7	X

Component	Minnesota Right To Know
Carbon black 1333-86-4	X
Acrylated Monomer	X
Xylenes (o-, m-, p- isomers) 1330-20-7	X

Component	New Jersey Right To Know
Glycol Ether Acrylate	X
Carbon black 1333-86-4	X
Xylenes (o-, m-, p- isomers) 1330-20-7	X

Component	Pennsylvania Right To Know
Glycol Ether Acrylate	X
Carbon black 1333-86-4	X
Xylenes (o-, m-, p- isomers) 1330-20-7	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
Carbon black	Carcinogen

- This product contains carbon black in a non-respirable form. Inhalation of carbon black is unlikely to occur from exposure to this product

Canada

Component	NPRI - National Pollutant Release Inventory
Xylenes (o-, m-, p- isomers) 1330-20-7	Part 1, Group A Substance Part 5, Isomer Groups Part 4 Substance

16. OTHER INFORMATION

HMIS:	Health	Flammability	Reactivity	Personal Protection
	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

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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