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

Product identifier

Product code **10037302S2**
Product name **Special S2 Cool Gray 5C**
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: +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

Skin Corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 1 - (H318)
Chronic aquatic toxicity	Category 3 - (H412)
Flammable liquids	Category 3 - (H226)

Label elements



Signal Word
Danger

Hazard Statements

H315 - Causes skin irritation
H318 - Causes serious eye damage
H412 - Harmful to aquatic life with long lasting effects
H226 - Flammable liquid and vapor

Precautionary Statements

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

P332 + P313 - If skin irritation occurs: Get medical advice/attention

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

P273 - Avoid release to the environment

P233 - Keep container tightly closed

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

P403 + P235 - Store in a well-ventilated place. Keep cool

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Hazards not otherwise classified (HNOC)

Harmful to aquatic life.

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

Component	CAS-No	Weight %	Trade Secret	Note
Titanium dioxide	13463-67-7	30 - 60	*	
Ethylene glycol monopropyl ether	2807-30-9	10 - 30	*	
Cyclohexanone	108-94-1	10 - 30	*	
Ethylene glycol monobutyl ether acetate	112-07-2	1 - 5	*	
Diethylene Glycol Ethyl Ether Acetate	112-15-2	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 (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
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³
Cyclohexanone 108-94-1	TWA: 20 ppm Skin STEL: 50 ppm
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm

Component	OSHA PEL
Titanium dioxide 13463-67-7	TWA: 15 mg/m ³ total dust
Cyclohexanone 108-94-1	TWA: 50 ppm TWA: 200 mg/m ³

Component	OSHA PEL (vacated)
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³ total dust
Cyclohexanone 108-94-1	TWA: 25 ppm TWA: 100 mg/m ³ Skin

Component	Ontario TWAEV
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³
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
Ethylene glycol monobutyl ether acetate 112-07-2	TWA: 20 ppm

Component	Mexico OEL (TWA)
Titanium dioxide 13463-67-7	TWA/VLE-PPT: 10 mg/m ³ Ti STEL/PPT-CT: 20 mg/m ³ Ti
Cyclohexanone 108-94-1	TWA/VLE-PPT: 50 ppm TWA/VLE-PPT: 200 mg/m ³ STEL/PPT-CT: 100 ppm STEL/PPT-CT: 400 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
Odor	No information available	Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	1.4	

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) 11.7

VOC by weight % (less water)	VOC by volume % (less water)	VOC lbs/gal (less water)	VOC grams/liter (less water)
39.2	39.55	4.59	549.91

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.
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.

Component	Oral LD50
Titanium dioxide 13463-67-7	> 10000 mg/kg (Rat)
Ethylene glycol monopropyl ether 2807-30-9	= 3089 mg/kg (Rat)
Cyclohexanone 108-94-1	= 1544 mg/kg (Rat)
Ethylene glycol monobutyl ether acetate 112-07-2	= 2400 mg/kg (Rat)
Diethylene Glycol Ethyl Ether Acetate 112-15-2	= 11 g/kg (Rat)

Component	LD50 Dermal
Ethylene glycol monopropyl ether	= 870 mg/kg (Rabbit)

2807-30-9 Ethylene glycol monobutyl ether acetate 112-07-2	= 1500 mg/kg (Rabbit)
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Component	Inhalation LC50
Ethylene glycol monopropyl ether 2807-30-9	= 1530 ppm (Rat) 7 h
Cyclohexanone 108-94-1	= 8000 ppm (Rat) 4 h
Ethylene glycol monobutyl ether acetate 112-07-2	> 400 ppm (Rat) 4 h

Information on toxicological effects

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 damage. (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.

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.

Component	ACGIH
Cyclohexanone 108-94-1	A3
Ethylene glycol monobutyl ether acetate 112-07-2	A3

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

Component	OSHA
Titanium dioxide 13463-67-7	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)	4,895.00
ATEmix (dermal)	3,172.00
ATEmix (inhalation-dust/mist)	7.70
ATEmix (inhalation-vapor)	228.00

12. ECOLOGICAL INFORMATION

Ecotoxicity

Specific test data for the substance or mixture is not available. Harmful to aquatic life with long lasting effects. (based on

components).

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

Component	Algae/aquatic plants
Ethylene glycol monobutyl ether acetate 112-07-2	> 500: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50

Component	Fish
Cyclohexanone 108-94-1	8.9: 96 h <i>Pimephales promelas</i> mg/L LC50 481 - 578: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through

Component	Crustacea
Ethylene glycol monobutyl ether acetate 112-07-2	37: 48 h <i>Daphnia magna</i> mg/L EC50

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Component	Partition coefficient
Cyclohexanone 108-94-1	0.86
Ethylene glycol monobutyl ether acetate 112-07-2	1.51

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

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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	10 - 30	1.0
Ethylene glycol monobutyl ether acetate	112-07-2	1 - 5	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	10 - 30
Ethylene glycol monobutyl ether acetate	112-07-2	1 - 5
Diethylene Glycol Ethyl Ether Acetate	112-15-2	1 - 5

U.S. State Regulations

Component	Massachusetts Right To Know
Titanium dioxide 13463-67-7	X
Cyclohexanone 108-94-1	X

Component	Minnesota Right To Know
Titanium dioxide 13463-67-7	X
Cyclohexanone 108-94-1	X

Component	New Jersey Right To Know
Titanium dioxide 13463-67-7	X
Ethylene glycol monopropyl ether 2807-30-9	X
Cyclohexanone 108-94-1	X
Ethylene glycol monobutyl ether acetate 112-07-2	X
Diethylene Glycol Ethyl Ether Acetate 112-15-2	X

Component	Pennsylvania Right To Know
Titanium dioxide 13463-67-7	X
Ethylene glycol monopropyl ether 2807-30-9	X
Cyclohexanone 108-94-1	X
Ethylene glycol monobutyl ether acetate 112-07-2	X
Diethylene Glycol Ethyl Ether Acetate 112-15-2	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
Cyclohexanone 108-94-1	Part 4 Substance
Ethylene glycol monobutyl ether acetate 112-07-2	Part 5, Other Groups and Mixtures Part 4 Substance
Diethylene Glycol Ethyl Ether Acetate 112-15-2	Part 5, Other Groups and Mixtures Part 4 Substance

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

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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