



Material Safety Data Sheet

Conforms to EU Directive 91/155/EC and ISO 11014-1

Product name : 3900 Series Flexible Vinyl Banner Screen Ink

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Version : 1.00

Date of issue : 13/11/2005.

Date of previous issue : No previous validation.

1. Identification of the substance/preparation and of the company

Product name : 3900 Series Flexible Vinyl Banner Screen Ink

Product code : 494

Use of the substance/preparation : Ultraviolet curable screen ink

Supplier : GL Specialized Inks (Pty) Ltd
8 Hawthorne Place, Mahogany Ridge, Pinetown, Durban
36 Roper Street, New Centre, Johannesburg
19 Vierlanden Street, Durbanville, Cape Town

Emergency telephone number : 031 - 700 6455
011 - 493 0383
021 - 975 5240

2. Composition/information on ingredients

Chemical characterization : Mixture.

Ingredient name	CAS number	%	EC number	Classification
resin mixture		<3		Not classified.
acrylate mixture		19 - 50		Not classified.
pigment mixture		0 - 12		Not classified.
titanium dioxide	13463-67-7	0 - 45	236-675-5	Not classified.
2-propenoic acid, 2-phenoxyethyl ester	48145-04-6	13 - 31	256-360-6	Xi; R36
calcium carbonate.	471-34-1	10 - 15	207-439-9	Not classified.
silica, amorphous, fumed	7631-86-9	0 - 5	231-545-4	Not classified.
carbon black	1333-86-4	0 - 5	215-609-9	Not classified.
triethanolamine	102-71-6	0 - 2	203-049-8	Xi; R36
See section 16 for the full text of the R-phrases declared above				

Occupational exposure limits, if available, are listed in section 8.

This MSDS covers all formulations in the the range. Not all of the components listed will be present in an individual formulation. Formulae specific MSDS available on request.

3. Hazards identification

The preparation is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Xi; R36

Physical/chemical hazards : No known significant effects or critical hazards.

Human health hazards : Irritating to eyes.

Environmental hazards : No known significant effects or critical hazards.

See section 11 for more detailed information on health effects and symptoms.

4. First aid measures

Inhalation : Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if symptoms occur. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

- Ingestion** : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if symptoms occur. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if irritation develops. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.

See section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

Extinguishing media

- Suitable** : In case of fire, use water spray (fog), foam or dry chemical.
- Not suitable** : None known.
- Special exposure hazards** : No specific hazard.
- Hazardous thermal decomposition products** : These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂ etc.). Some metallic oxides.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials), scoop up material and place in a sealable, liquid-proof container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

7. Handling and storage

- Handling** : Avoid contact with eyes. Wash thoroughly after handling.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area. Store between 10 to 32°C (50 to 89.6°F).
- Packaging materials**
- Recommended** : Use original container.

8. Exposure controls/personal protection

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
titanium dioxide	ACGIH (United States). TWA: 10 mg/m ³ ACGIH TLV (United States, 1/2004). Notes: Substance identified by other sources as a suspected or confirmed human carcinogen. 1996 Adoption Substances for which the TLV is higher than the OSHA Permissible Exposure Limit (PEL) and/or the NIOSH Recommended Exposure Limit (REL). See CFR 58(124) :36338-33351, June 30, 1993, for revised OSHA PEL. Refers to Appendix A – Carcinogens. TWA: 10 mg/m ³ 8 hour/hours. Form: All forms
calcium carbonate.	ACGIH TLV (United States, 1/2004). Notes: The value is for total dust containing no asbestos and < 1% crystalline silica. TWA: 10 mg/m ³ 8 hour/hours. Form: All forms
silica, amorphous, fumed	ACGIH (United States). TWA: 10 mg/m ³ TWA: 6 mg/m ³
carbon black	ACGIH TLV (United States, 1/2004). Notes: Substance identified by other sources as a suspected or confirmed human carcinogen. 1996 Adoption Refers to Appendix A – Carcinogens. TWA: 3.5 mg/m ³ 8 hour/hours. Form: All forms

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triethanolamine	ACGIH (United States). TWA: 5 mg/m ³ TWA: 5 mg/m ³ ACGIH TLV (United States, 1/2004). TWA: 5 mg/m ³ 8 hour/hours. Form: All forms
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Occupational exposure controls	: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location.
Respiratory protection	: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Hand protection	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: Nitrile gloves. Neoprene gloves.
Eye protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Skin protection	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

9. Physical and chemical properties

General information

Appearance

Physical state	: Liquid. (Viscous liquid.)
Color	: Various
Odor	: Sweetish. (Slight.)

Important health, safety and environmental information

pH	: Basic.
Boiling point	: >150°C (302°F)
Melting point	: May start to solidify at 21.95°C (71.5°F) based on data for: triethanolamine.
Flash point	: Closed cup: >95°C (203°F). (Pensky-Martens.)
Flammability (solid, gas)	: Combustible liquid
Explosive properties	: Slightly explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Explosion limits	: The greatest known range is Lower: 1.3% Upper: 10% (triethanolamine)
Vapor pressure	: The highest known value is 0.001 kPa (0.01 mm Hg) (at 20°C) (triethanolamine).
Relative density	: 0.95 to 1.25 g/cm ³
Solubility	: Very slightly soluble in diethyl ether. Insoluble in cold water, hot water, methanol, n-octanol, acetone.
Octanol/water partition coefficient	: The product is insoluble in water and octanol.
Vapor density	: The highest known value is 5.14 (Air = 1) (triethanolamine).
Evaporation rate (butyl acetate = 1)	: <0.005 (triethanolamine) compared with Butyl acetate.

Other information

Auto-ignition temperature	: The lowest known value is 485°C (905°F) (2-propenoic acid, 2-phenoxyethyl ester).
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10. Stability and reactivity

Stability	: The product is stable.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame).
Materials to avoid	: Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.
Hazardous decomposition products	: Evolves toxic fumes when heated to decomposition.

11. Toxicological information

Potential acute health effects

- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.
- Skin contact** : Slightly irritating to the skin.
- Eye contact** : Irritating to eyes.

Acute toxicity

<u>Product/ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
2-propenoic acid, 2-phenoxyethyl ester	LD50	4500 mg/kg	Oral	Mouse
calcium carbonate.	LD50	1800 mg/kg	Dermal	Rabbit
silica, amorphous, fumed	LD50	6450 mg/kg	Oral	Rat
carbon black	LD50	3160 mg/kg	Oral	Rat.
	LD50	>15400 mg/kg	Oral	Rat
	LD50	>3000 mg/kg	Dermal	Rabbit
triethanolamine	LD50	2200 mg/kg	Oral	Rabbit
	LD50	2200 mg/kg	Oral	Guinea pig
	LD50	5846 mg/kg	Oral	Mouse

Potential chronic health effects

- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Inhalation** : Inhalation of vapors may cause dizziness, an irregular heartbeat, narcosis, nausea or asphyxiation.
- Ingestion** : Ingestion may cause nausea, weakness and central nervous system effects.
- Skin** : Repeated skin exposure can produce local skin destruction or dermatitis.
- Target organs** : Contains material which causes damage to the following organs: blood, kidneys, lungs, liver, upper respiratory tract, skin, eye, lens or cornea

12. Ecological information

Ecotoxicity data

<u>Ingredient name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>
titanium dioxide	Daphnia magna (EC50)	48 hour/hours	>1000 mg/l
triethanolamine	Scenedesmus subspicatus (EC50)	48 hour/hours	470 mg/l
	Scenedesmus subspicatus (EC50)	48 hour/hours	750 mg/l
	Pimephales promelas (LC50)	96 hour/hours	11800 mg/l

Other ecological information

Persistence/degradability

<u>Ingredient name</u>	<u>BOD₅</u>	<u>COD</u>	<u>ThOD</u>
triethanolamine	<1 g O ₂ /g [5 - 15 d]	-	-

<u>Ingredient name</u>	<u>Aquatic half-life</u>	<u>Photolysis</u>	<u>Biodegradability</u>
2-propenoic acid, 2-phenoxyethyl ester	-	-	Inherent
triethanolamine	< 28 day/days	<1 day/days.	Inherent

Bioaccumulative potential

<u>Ingredient name</u>	<u>LogP_{ow}</u>	<u>BCF</u>	<u>Potential</u>
triethanolamine	-1.32	1 to 3.9	low

- Other adverse effects** : No known significant effects or critical hazards.

13. Disposal considerations

- Methods of disposal** : Non-hazardous waste
Waste must be disposed to a landfill permitted in terms of the Department of Water Affairs and Forestry's minimum requirements for waste disposal to landfill, and the minimum requirements for the handling, classification and disposal of hazardous waste.

14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
ADR / SANS 10228 Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA Class	Not regulated.	-	-	-		-

15. Regulatory information**SANS 10265 / EU Regulations**

Hazard symbol/symbols :



Irritant

Risk phrases : R36- Irritating to eyes.

Safety phrases : S25- Avoid contact with eyes.

Product use : Classification and labeling have been performed according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and the intended use.
- Industrial applications.**16. Other information**

Full text of R-phrases referred to in sections 2 and 3 - Europe : R36- Irritating to eyes.

Prepared by : GL Inks EHS

Notice to reader

This MSDS summarises at the date of issue our best knowledge of the health, safety and environmental hazard information related to the product and, in particular, how to safely handle, use, and transport the product in the workplace. Since GL Specialized inks (Pty) Ltd cannot anticipate or control the conditions under which the product may be handled, used, stored or transported, each user must, prior to usage, review the MSDS in the context of how the user intends to handle, use, store or transport the product in the workplace and beyond; and communicate such information to all relevant parties. If clarification, or further information is required to ensure that an appropriate assessment can be made, the user should contact the company.

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