



Material Safety Data Sheet

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

Product name : Scratch Off Inks

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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 : Scratch Off Inks
Product code : D590
Use of the substance/preparation : Screen printing 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		15 - 20		Not classified.
pigment mixture		0 - 20		Not classified.
lead chromate molybdate sulfate red	12656-85-8	0 - 40	235-759-9	Carc. Cat. 3; R40 Repr. Cat. 1; R61 Repr. Cat. 3; R62 R33 N; R50/53
lead sulfochromate yellow	1344-37-2	0 - 40	215-693-7	Carc. Cat. 3; R40 Repr. Cat. 1; R61 Repr. Cat. 3; R62 R33 N; R50/53
stoddart solvent	8052-41-3	55 - 65	232-489-3	Xn; R65
titanium dioxide	13463-67-7	0 - 50	236-675-5	Not classified.
aluminium	7429-90-5	15 - 20	231-072-3	F; R15 R10
copper	7440-50-8	0 - 29	231-159-6	N; R50/53
carbon black	1333-86-4	0 - 20	215-609-9	Not classified.
silica, crystalline - cristobalite	14464-46-1	4 - 8	238-455-4	Not classified.
solvent naphtha (petroleum), light arom.	64742-95-6	<4	265-199-0	Xn; R65
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 : Carc. Cat. 3; R40
 Repr. Cat. 1; R61
 Repr. Cat. 3; R62
 R33
 N; R50/53

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

Human health hazards : Danger of cumulative effects.
 Limited evidence of a carcinogenic effect.
 May cause harm to the unborn child.
 Possible risk of impaired fertility.

Environmental hazards : Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

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

4. First aid measures

- Inhalation** : Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. 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** : Get medical attention immediately. 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. 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. Get medical attention if irritation develops. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing or wear gloves. 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 if irritation occurs.

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** : Do not use water jet.

Special exposure hazards : No specific hazard.

This material is toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : These products are carbon oxides (CO, CO₂). 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 of spilled material and runoff with soil and surface waterways.
- Storage** : Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).
- Packaging materials**
- Recommended** : Use original container.

8. Exposure controls/personal protection

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
stoddart solvent	<p>ACGIH (United States, 1994). TWA: 100 ppm TWA: 100 mg/m³ CEIL: 125 mg/m³</p> <p>ACGIH TLV (United States, 1/2004). Notes: 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. TWA: 525 mg/m³ 8 hour/hours. Form: All forms TWA: 100 ppm 8 hour/hours. Form: All forms</p>
titanium dioxide	<p>ACGIH (United States). TWA: 10 mg/m³</p> <p>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/m³ 8 hour/hours. Form: All forms</p>
aluminium	<p>ACGIH (United States). Notes: Respirable TWA: 5 mg/m³</p> <p>ACGIH TLV (United States). Notes: Total TWA: 15 mg/m³ 8 hour/hours.</p> <p>ACGIH TLV (United States, 1/2004). TWA: 5 mg/m³ 8 hour/hours. Form: All forms TWA: 10 mg/m³ 8 hour/hours. Form: Dust TWA: 5 mg/m³ 8 hour/hours. Form: Fume</p>
copper	<p>ACGIH TLV (United States, 1/2004). Notes: Adopted Values enclosed are those for which changes are proposed. Consult the Notice of Intended Changes for current proposal. See Notice of Intended changes. TWA: 1 mg/m³ 8 hour/hours. Form: All forms</p> <p>ACGIH TLV (United States, 1/2004). Notes: Adopted Values enclosed are those for which changes are proposed. Consult the Notice of Intended Changes for current proposal. 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. See Notice of Intended changes. TWA: 0.2 mg/m³ 8 hour/hours. Form: Fume</p>
carbon black	<p>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/m³ 8 hour/hours. Form: All forms</p>
silica, crystalline - cristobalite	<p>ACGIH TLV (United States, 1/2005). Notes: Substance identified by other sources as a suspected or confirmed human carcinogen. Respirable fraction; see Appendix C, paragraph C. TWA: 0.05 mg/m³ 8 hour/hours. Form: All forms</p>

- 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:
Neoprene gloves. Nitrile 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	: Characteristic.
Odor threshold	: The lowest known value is 1 ppm (Stoddart solvent)

Important health, safety and environmental information

Boiling point	: >150°C (302°F)
Melting point	: May start to solidify at -73°C (-99.4°F) based on data for: Solvent naphtha (petroleum), light arom..
Flash point	: Closed cup: 63°C (145.4°F). (Tagliabue.)
Flammability (solid, gas)	: Combustible liquid
Explosive properties	: 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: 0.9% Upper: 6% (Solvent naphtha (petroleum), light arom.)
Vapor pressure	: The highest known value is 0.3 kPa (2 mm Hg) (at 20°C) (Stoddart solvent).
Relative density	: Weighted average: 3.93 g/cm ³
Solubility	: Soluble in diethyl ether, n-octanol. Very slightly soluble in methanol. Insoluble in cold water, hot water, acetone.
Octanol/water partition coefficient	: The product is much more soluble in octanol.
Viscosity	: Dynamic: The highest known value is 0.91 cP (Stoddart solvent)
Vapor density	: The highest known value is 5 (Air = 1) (Stoddart solvent).
Evaporation rate (butyl acetate = 1)	: 1 (Stoddart solvent) compared with Butyl acetate

Other information

Auto-ignition temperature	: The lowest known value is 232.22°C (450°F) (Stoddart solvent).
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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 reducing materials, organic 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	: Slightly irritating to the eyes.

Acute toxicity

Product/ingredient name	Test	Result	Route	Species
carbon black	LD50	>15400 mg/kg	Oral	Rat
	LD50	>3000 mg/kg	Dermal	Rabbit
Solvent naphtha (petroleum), light arom.	LD50	8400 mg/kg	Oral	Rat
	LD50	>2150 mg/kg	Oral	quail
	LC50	10200 mg/m ³ (4 hour/hours)	Inhalation	Rat.

Potential chronic health effects

Ingredient name	Carcinogenic effects	Mutagenic effects	Developmental toxicity	Impairs fertility
lead chromate molybdate sulfate red	Carc. Cat. 3; R40	-	Repr. Cat. 1; R61	Repr. Cat. 3; R62
lead sulfochromate yellow	Carc. Cat. 3; R40	-	Repr. Cat. 1; R61	Repr. Cat. 3; R62

Carcinogenicity : Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Mutagenicity	: No known significant effects or critical hazards.
Reproductive toxicity	: Contains material which can cause birth defects.
<u>Over-exposure signs/symptoms</u>	
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, the nervous system, liver, upper respiratory tract, skin, central nervous system (CNS), 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
aluminium	Oncorhynchus mykiss (LC50)	96 hour/hours	0.12 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	0.16 mg/l
copper	Oncorhynchus mykiss (LC50)	96 hour/hours	0.31 mg/l
	Daphnia magna (EC50)	48 hour/hours	0.0318 mg/l
	Daphnia magna (EC50)	48 hour/hours	0.036 mg/l
	Daphnia magna (EC50)	48 hour/hours	0.055 mg/l
	Pimephales promelas (LC50)	96 hour/hours	0.0094 mg/l
	Pimephales promelas (LC50)	96 hour/hours	0.0103 mg/l
	Pimephales promelas (LC50)	96 hour/hours	0.0278 mg/l

Other ecological information

Persistence/degradability

<u>Ingredient name</u>	<u>Aquatic half-life</u>	<u>Photolysis</u>	<u>Biodegradability</u>
copper	> 100 day/days	-	Not readily

Bioaccumulative potential



<u>Ingredient name</u>	<u>LogP_{ow}</u>	<u>BCF</u>	<u>Potential</u>
copper	-	1000	high


Other adverse effects : Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

13. Disposal considerations

Methods of disposal : Hazardous chemical 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	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	9	III		<u>Hazard identification number</u> 90 <u>Limited quantity</u> LQ7 <u>CEFIC Tremcard</u> 90GM6-III
IMDG Class	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	9	III		<u>Emergency schedules (EmS)</u> F-A, S-F
				III		

IATA Class	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	9			Passenger and Cargo Aircraft Packaging instructions: 914 Cargo Aircraft Only Packaging instructions: 914 Limited Quantities - Passenger Aircraft Quantity limitation: 30 kg Packaging instructions: Y914
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15. Regulatory information

SANS 10265 / EU Regulations

Hazard symbol/symbols



Toxic, Dangerous for the environment.

Risk phrases

- : R40- Limited evidence of a carcinogenic effect.
- R61- May cause harm to the unborn child.
- R62- Possible risk of impaired fertility.
- R33- Danger of cumulative effects.
- R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases

- : S53- Avoid exposure - obtain special instructions before use.
- S36/37- Wear suitable protective clothing and gloves.
- S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.

Contains

- : lead chromate molybdate sulfate red 235-759-9
- lead sulfochromate yellow 215-693-7

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

- : R15- Contact with water liberates extremely flammable gases.
- R10- Flammable.
- R40- Limited evidence of a carcinogenic effect.
- R61- May cause harm to the unborn child.
- R62- Possible risk of impaired fertility.
- R65- Harmful: may cause lung damage if swallowed.
- R33- Danger of cumulative effects.
- R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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.

We shall not assume any liability of the accuracy or completeness of the information contained herein, or any advice given, unless there has been gross negligence on our part. In such an event, or liability shall be limited only to direct damages suffered. Our responsibility for the product as sold is subject to our standard terms and conditions. All risk with possession and application of the product passes on delivery.