



GL Specialized Inks (Pty) Ltd

Material Safety Data Sheet

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

Product name : EVA Inks

Page: 1/6

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 : EVA Inks
Product code : 448
Use of the substance/preparation : Solvent based 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 mixtures		15 - 25		Not classified.
pigment mixture		0 - 15		Not classified.
solvent naphtha (petroleum), heavy arom.	64742-94-5	20 - 30	265-198-5	Xn; R65
titanium dioxide	13463-67-7	0 - 40	236-675-5	Not classified.
solvent naphtha (petroleum), light arom.	64742-95-6	15 - 20	265-199-0	Xn; R65
lead chromate molybdate sulfate red	12656-85-8	0 - 30	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 - 30	215-693-7	Carc. Cat. 3; R40 Repr. Cat. 1; R61 Repr. Cat. 3; R62 R33 N; R50/53
2-butoxyethanol	111-76-2	10 - 15	203-905-0	Xn; R20/21/22 Xi; R36/38
copper	7440-50-8	0 - 15	231-159-6	N; R50/53
aluminium	7429-90-5	0 - 10	231-072-3	F; R15 R10
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 : F; R11
 Carc. Cat. 3; R40
 Repr. Cat. 1; R61
 Repr. Cat. 3; R62
 R33
 N; R50/53

Physical/chemical hazards : Highly flammable.

:

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** : 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. Get medical attention. 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 : Highly flammable liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

This material is very 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. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment. Do not touch or walk through spilled material.
- 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) and use a non-sparking or explosion-proof means to transfer material to a sealable, appropriate 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 : Keep container closed. Use only with adequate ventilation. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Avoid contact of spilled material and runoff with soil and surface waterways.

Storage : Store in a segregated and approved area. 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

Ingredient name	Occupational exposure limits
solvent naphtha (petroleum), heavy arom.	ACGIH (United States). TWA: 100 ppm
	TWA: 525 mg/m ³
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.
2-butoxyethanol	TWA: 10 mg/m ³ 8 hour/hours. Form: All forms
	EU OEL (Europe, 6/2000). Skin
	STEL: 246 mg/m ³ 15 minute/minutes. Form: All forms
	STEL: 50 ppm 15 minute/minutes. Form: All forms
	TWA: 98 mg/m ³ 8 hour/hours. Form: All forms
copper	TWA: 20 ppm 8 hour/hours. Form: All forms
	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/m ³ 8 hour/hours. Form: All forms
	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.
aluminium	TWA: 0.2 mg/m ³ 8 hour/hours. Form: Fume
	ACGIH (United States). Notes: Respirable
	TWA: 5 mg/m ³
	ACGIH TLV (United States). Notes: Total
	TWA: 15 mg/m ³ 8 hour/hours.
	ACGIH TLV (United States, 1/2004).
	TWA: 5 mg/m ³ 8 hour/hours. Form: All forms
	TWA: 10 mg/m ³ 8 hour/hours. Form: Dust
	TWA: 5 mg/m ³ 8 hour/hours. Form: Fume

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 : Odorless.

Important health, safety and environmental information

- Boiling point : >100°C (212°F)
 Melting point : May start to solidify at -73°C (-99.4°F) based on data for: Solvent naphtha (petroleum), heavy arom..
 Flash point : Closed cup: <15°C (59°F). (Setaflash.)
 Flammability (solid, gas) : Highly flammable 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: 1.1% Upper: 10.6% (2-butoxyethanol)
 Vapor pressure : The highest known value is 28.3 kPa (212 mm Hg) (at 20°C) (2-butoxyethanol).
 Solubility : Easily soluble in diethyl ether, n-octanol.
 Soluble in methanol.
 Insoluble in cold water, hot water.
 Octanol/water partition coefficient : The product is much more soluble in octanol.
 Vapor density : The highest known value is 4.8 (Air = 1) (Solvent naphtha (petroleum), heavy arom.).
 Evaporation rate (butyl acetate = 1) : 0.072 (2-butoxyethanol) compared with Butyl acetate.

Other information

- Auto-ignition temperature : The lowest known value is 244°C (471.2°F) (2-butoxyethanol).

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
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.
2-butoxyethanol	LD50	470 mg/kg	Oral	Rat
	LD50	300 mg/kg	Oral	Rabbit
	LD50	1200 mg/kg	Oral	Guinea pig
	LD50	220 mg/kg	Dermal	Rabbit

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.

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, the nervous system, liver, lymphatic system, 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
2-butoxyethanol	Lepomis macrochirus (LC50)	96 hour/hours	1490 mg/l
copper	Daphnia magna (EC50)	48 hour/hours	0.0318 mg/l
	Daphnia magna (EC50)	48 hour/hours	0.036 mg/l
aluminium	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
	Oncorhynchus mykiss (LC50)	96 hour/hours	0.12 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	0.16 mg/l
	Oncorhynchus mykiss (LC50)	96 hour/hours	0.31 mg/l

Other ecological information

Persistence/degradability

<u>Ingredient name</u>	<u>BOD₅</u>	<u>COD</u>	<u>ThOD</u>
2-butoxyethanol	>1 g O ₂ /g [10 d]	-	-

<u>Ingredient name</u>	<u>Aquatic half-life</u>	<u>Photolysis</u>	<u>Biodegradability</u>
2-butoxyethanol	-	1 day/days.	Readily
copper	> 100 day/days	-	Not readily

Bioaccumulative potential



<u>Ingredient name</u>	<u>LogP_{ow}</u>	<u>BCF</u>	<u>Potential</u>
2-butoxyethanol	-	2.5	low
copper	-	1000	high


Other adverse effects : Very 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	UN1210	PRINTING INK	3	III		Hazard identification number 30 Limited quantity LQ7 CEPIC Tremcard 30GF1-III of 30GF1-sp
IMDG Class	UN1210	PRINTING INK	3	III		Emergency schedules (EmS) F-E, S-D
				III		

IATA Class	UN1210	PRINTING INK	3			Passenger and Cargo Aircraft Quantity limitation: 60 L Packaging instructions: 309 Cargo Aircraft Only Quantity limitation: 220 L Packaging instructions: 310 Limited Quantities - Passenger Aircraft Quantity limitation: 10 L Packaging instructions: Y309
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15. Regulatory information

SANS 10265 / EU Regulations

Hazard symbol/symbols :



Highly flammable, Toxic, Dangerous for the environment.

Risk phrases

- : R11- Highly flammable.
- 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

- : R11- Highly flammable.
- 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.
- R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.
- R65- Harmful: may cause lung damage if swallowed.
- R36/38- Irritating to eyes and skin.
- 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.