

MSDS Reference Number(s): 106-63Bk, 106-64DBI

MATERIAL SAFETY DATA SHEET

SECTION I - MATERIAL IDENTIFICATION AND USE

Material Name Identifier:

R2-S2 Cartridges (Contains 850 ink)

Supplier Name: Sterling Marking Products Inc. Webpage: <http://www.sterling.ca>
 Street Address: 349 Ridout St. N., P.O. Box 5055
 City and Province: London, Ontario Postal Code: N6A 5S4
 Telephone Numbers: (519) 434-5785, (800) 265-5957 Fax Number: (519) 434-9516, (800) 667-6600
 Emergency Telephone Number: Poison Control Centre _____
 Material Use: **Cartridges – Containing 25.6mL of 850 Ink in each cartridge**

TDG Shipping Information:

Printing ink, UN1210, Class: 3 – Flammable Liquid; PG: II - Medium Danger

Emergency Response Guide Book No.: 129

WHMIS Classification:

Class B - Division 2 – Flammable Liquids
 Class D, Division 2B - Skin/Eye Irritant

IATA Shipping (Air):

Printing ink
Packaging Instruction for Limited Quantity: Y305
Maximum Net Quantity (per outer package or over pack): 1L
 Refer to Pkg. Inst. No. for type of inner packaging and maximum quantity per inner package.

SECTION II - HAZARDOUS INGREDIENTS

Component	CAS Registry	Toxicology	Concentration % (w/w)
Ethanol	64-17-5	ACGIH TLV-TWA 1000 ppm L _D 50: 3945mg/kg (oral, rat) L _C 50: 20,000ppm/10H (inhalation, rat)	57.5
Isopropanol	67-63-0	ACGIH TLV-TWA 200 ppm; STEL 400 ppm L _D 50: 5045mg/kg (oral, rat) L _C 50: 16,000ppm/4H (inhalation, rat)	12.8

SECTION IIb - OTHER INGREDIENTS

2-Propoxyethanol	2807-30-9	TLV: Not Established L _D 50: Not available L _C 50: Not available	0-1
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Physical State: Solid containing a liquid	% Volatile: Not available
Specific Gravity of the ink: <1	Boiling Point of the ink (°C): 77
Colour: Various	Odour: Alcohol
Viscosity of the ink: As water	Solubility in Water of the ink (20 °C): Partially soluble
Clarity: Not applicable	Flash Point of the ink (°C): 12

SECTION IV - FIRE AND EXPLOSION DATA

Flammability: Flammable

Flash Point of the ink (°C TCC): 12



LEL (% vol) lowest value of components: Not established

UEL (% vol) highest value of components: Not established

Hazardous Combustion Products: Oxides of carbon, oxides of nitrogen. Fire may produce irritating and/or toxic gases.

Potential Hazards:

- Flammable/combustible material.
- May be ignited by friction, heat, sparks or flames.
- Some may burn rapidly with flare burning effect.
- Powders, dusts, shavings, borings, turnings or cuttings may explode or burn with explosive violence.
- Substance may be transported in a molten form.
- May re-ignite after fire is extinguished.

Means of Extinction of Small Fire: Dry chemical, CO₂, sand, earth, water spray or regular foam.

Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Means of Extinction of Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

SECTION V - REACTIVITY DATA

Stability: Stable

Incompatibility: Amines, alkalis, strong acids and oxidizers. Ethanol reacts with aluminum at high temperatures.

Hazardous Decomposition Products: Oxides of carbon, oxides of nitrogen. Fire may produce irritating and/or toxic gases.

SECTION VI - TOXICOLOGICAL PROPERTIES

Route of Entry: Eye, Skin, Inhalation, Ingestion

Effects of Acute Exposure:

Eye: Excessive exposure to vapours may produce irritation.

Skin: Contact may lead to dryness, redness and local irritation.

Inhalation: Exposure to vapour concentration far in excess in TLV may result in signs of dizziness and in-coordination.

Ingestion: Not considered a normal route of entry in industrial applications. Excessive quantity may cause headache, nausea and vomiting. Ingestion of as little as 10mL of Isopropanol may cause serious injury, while ingestion of 100mL can be fatal. Persons on Disulfiram (Antabuse R) therapy should be aware that the ethyl alcohol in this product is hazardous to them, just as alcohol from any source. Disulfiram reactions may follow ingestion of small amounts of alcohol and have also been described from skin contact. Reports of animal test studies, on one or more of the individual ingredients, have shown possible effects to the liver and kidneys. The relevance of these effects to man is unknown.

Effects of Chronic Exposure:

Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects, which together constitute the fetal alcohol syndrome. These include mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioral disorders and a small -sized head.

Pregnant women and persons with pre-existing health disorders should consult their physician before using this product. Persons with pre-existing skin or lung disorders may be susceptible to the effects of this material. Repeated and prolonged overexposure, and/or individual sensitivity, may increase the potential for, and degree of, adverse health effects.

Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Irritancy: Hazardous by WHMIS criteria

Respiratory Tract Sensitization: Not established

Carcinogenicity: Not hazardous by WHMIS criteria.

Synergistic Materials: Not established

Reproductive Effects: Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects, which together constitute the fetal alcohol syndrome. These include mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioral disorders and a small -sized head.

Teratogenicity: Not established

Mutagenicity: Not established

SECTION VII - PREVENTATIVE MEASURES

Gloves: Solvent impermeable gloves are required for repeated or prolonged contact.

Eye Protection: Wear safety glasses meeting the specification of ANSI Z87.1 where no contact with the eye is anticipated.

Chemical safety goggles meeting the specifications of ANSI Z87.1 should be worn whenever there is a possibility of splashing or other contact with the eyes.

Respiratory Protection: Proper selection of respiratory protection depends upon many factors, including duration and level of exposure and conditions of use. In general, exposure to organic chemicals, such as those contained in this product, may not require the use of respiratory protection, if used in a well-ventilated area. In areas of restricted ventilation, a NIOSH approved organic vapour respirator may be required. Under certain conditions, such as spraying, a mechanical pre-filter may also be required. In confined areas, or in high exposure situations, a NIOSH/MSHA approved air-supplied respirator may be required. If the TLV's listed in Section II are exceeded, use a properly fitted NIOSH/MSHA approved respirator with an appropriate protection factor.

Other Protective Equipment Recommended: Safety shower and eye wash fountain in the immediate work area.

Engineering Controls: Use general dilution and local exhaust in sufficient volume, and pattern to keep concentrations of hazardous ingredients listed in Section II below the lowest exposure limit stated. Fumes emitted while baking this product must be properly vented.

Leak and Spill Procedure:

- Keep unnecessary people away.
- Isolate hazard area and deny unnecessary entry.
- Keep out of sewers, storm drains, surface waters and soil.
- Vapor explosion hazard if indoors, outdoors, or in sewers.
- In case of large spills, warn public of downwind explosion hazard.
- Remove all possible ignition sources, like cigarettes, flames, pilot lights, electrical sources etc.
- Pump up (with appropriate explosion-proof equipment) or soak up with sand or other absorbent.
- Application of vapor suppression foams may be appropriate.
- Check area with approved explosion meter before re-entering area.
- Ground and bond all containers and handling equipment.
- Under some conditions of use, application of clay or cellulose-based absorbents on spills of this material may result in the generation of flammable vapors since there is a heat of absorption and a high surface area.

Waste Disposal: Review federal, provincial and local government requirements prior to disposal.

Storage Requirements: Store in a tightly closed container. Store away from incompatible materials. Store in a cool, dry, well-ventilated area. Ensure storage area has adequate ventilation, and no source of open flame or sparks. Limit quantity of the material in storage. Ensure all bottles are properly labeled.

SECTION VIII - FIRST AID

Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Eye: In case of contact with substance, immediately flush skin or eyes with running water for 15 minutes.

Skin: Remove and isolate contaminated clothing and shoes. In case of contact with substance, immediately flush skin or eyes with running water for 15 minutes. Removal of solidified molten material from skin requires medical assistance.

Inhalation: Move victim to fresh air. Call 911 or emergency medical service. Apply artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.

Ingestion: Call 911 or emergency medical service.

SECTION IX - PREPARATION AND ADDITIONAL INFORMATION

Prepared by: Sterling Marking Products Inc.
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Information for this material safety data sheet was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond the control of the supplier, it is assumed that user of this material has been fully trained according to the mandatory requirements of WHMIS. If user requires independent information on ingredients in this or any other material, we recommend contact with the Canadian Centre for Occupational Health and Safety (CCOHS) in Hamilton, Ontario (1-800-263-8276) or CSST in Montreal, Quebec (514-873-3990).