

MSDS Reference Number(s): 102-74

MATERIAL SAFETY DATA SHEET

SECTION I - MATERIAL IDENTIFICATION AND USE

Material Name Identifier:

DPI 74 Ink (Red)

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: **Ink**

TDG Shipping Information:

Printing ink UN1210 Class: 3 PG: II

WHMIS Classification:

Class B, Division 2 - Flammable Liquids
 Class D, Division 1B – Acutely Toxic
 Class D, Division 2A - Very Chronically Toxic (Contains Molybdate Orange Pigment)
 Class D, Division 2B - Skin/Eye Irritant

IATA Shipping (Air):

Printing ink
Packaging Instruction for Limited Quantity: Y341
Maximum Net Quantity (per outer package): 1L
 Refer to Pkg. Inst. No. for inner packaging type and maximum quantity per inner package. DGR – 54th edition

SECTION II - HAZARDOUS INGREDIENTS

Component	CAS Registry	Toxicology	Concentration % (w/w)
Methyl ethyl ketone	78-93-3	ACGIH TLV-TWA 200 ppm; STEL 300 ppm 2737mg/kg (oral, rat), 6480 mg/kg L _D 50: (skin, rabbit) L _C 50: 23.5g/m ³ /8H (inhalation, rat)	40-50
Ethanol	64-17-5	ACGIH TLV-TWA 1000 ppm L _D 50: 7060mg/kg (oral, rat) L _C 50: 20,000ppm/10H (inhalation, rat)	10-20
Ethyl acetate	141-78-6	TLV: 400ppm L _D 50: 5620 mg/kg (oral, rat)	1-5
Toluene	108-88-3	TLV: 50ppm 636 mg/kg (oral, rat), 14100 uL/kg L _D 50: (skin, rabbit) L _C 50: 49gm/m ³ /4H (inhalation, rat)	1-5
Molybdate orange	12656-85-8	ACGIH TLV-TWA 5 mg(Mo)/m ³ L _D 50: 400 mg/kg (oral, rat), slight irritation (skin, rabbit)	1-5
Isopropanol	67-63-0	ACGIH TLV-TWA 200 ppm; STEL 400 ppm 6410 mg/kg (oral, rat), 12800 mg/kg L _D 50: (skin, rabbit) L _C 50: 16,000ppm/84H (inhalation, rat)	1-5
Resin	9004-70-0	TLV: Not available L _D 50: > 5 g/kg (oral, rat)	1-5

SECTION III - PHYSICAL DATA

Physical State: Liquid
Specific Gravity: 0.90
Colour: **Red colored thin viscosity**
Solubility in water: Soluble
Vapour Density: Heavier than air

Boiling Point (°C): 77 – 111
Odour: Solvent
Evaporation Rate (Butyl acetate=1): <1
Flash Point (°C): -5

SECTION IV - FIRE AND EXPLOSION DATA

Flammability: Flammable
LEL (% vol) lowest value of components: 1.2
UEL (% vol) highest value of components: 19

Flash Point (°C TCC): -5

Hazardous Combustion Products: Oxides of carbon, oxides of nitrogen, and other organic combustion products.

Potential Hazards: **HIGHLY FLAMMABLE**: Will be easily ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours may travel to source of ignition and flash back. Most vapours are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapour explosion hazard indoors, outdoors or in sewers. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated.

Means of Extinction of Small Fire: **CAUTION**: This product has a low flash point: Use of water spray when fighting fire may be inefficient. Small Fires: Dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Use media suitable for surrounding fire. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

Special Fire-Fighting Procedures: Clear area of unprotected personnel. Firefighters should wear NIOSH-approved, self-contained breathing apparatus (SCBA). Use water spray to cool fire-exposed surfaces. Also, use water to flush spilled material away from source. Vapours are harmful; stay upwind of a fire to minimize breathing of vapours, gases, fumes, or decomposition products being generated.

Unusual Fire & Explosion Hazards: Containers exposed to intense heat from fire must be cooled to prevent vapour pressure build-up that may result in container rupture. Cool containers exposed directly to flames with large quantities of water as needed to prevent weakening of container itself. Never use a welding or cutting torch on or near container.

Empty Container Warning: “Empty” containers contain residues (liquid, solid, and/or vapour) that can be dangerous. **DO NOT** pressurize, cut, weld, braze, grind, drill, solder, or expose containers to heat, sparks, open flame. They may explode and cause injury and/or death. **DO NOT** attempt to clean drums. Residues are difficult to remove. “Empty” drums should be completely drained, properly bunged and promptly returned to a drum reconditioned. Dispose of all containers in an environmentally safe way and in accordance with governmental regulations. For work on tasks, refer to OSHA regulations ANSIZ49.1 and other governmental and industrial references pertaining to cleaning, repairing, welding, or other operations.

SECTION V - REACTIVITY DATA

Stability: Stable
Incompatibility: Strong oxidizing agents. Ethanol reacts with aluminum at high temperatures.
Hazardous Decomposition Products: Oxides of carbon, oxides of nitrogen, and other organic combustion products.

SECTION VI - TOXICOLOGICAL PROPERTIES

Route of Entry: Eye, Skin, Skin Absorption, Inhalation, Ingestion

Effects of Acute Exposure:

Eye: Direct eye contact with liquid will cause burning, redness and tearing. Contact with vapours are irritating to eyes.

Skin: Prolonged or repeated contact with liquid can cause drying and/or defatting of the skin, which may promote dermatitis and irritation.

Skin Absorption: Some components may absorb through the skin and cause central nervous system effects similar to inhalation.

Inhalation: Vapours can cause irritation to nose, throat and respiratory tract. High vapour concentrations may result in central nervous system depression evidenced by giddiness, headache, dizziness, and nausea. In extreme cases, unconsciousness and death can occur.

Ingestion: Swallowing of product will cause gastrointestinal distress, nausea, vomiting and/or diarrhea. Material is moderately toxic by ingestion.

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.

Ingestion of as little as 10mL of Isopropanol may cause serious injury, while ingestion of 100mL can be fatal.

Effects of Chronic Exposure:

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.

Repeated and prolonged overexposure, and/or individual sensitivity, may increase the potential for, and degree of, adverse health effects.

Irritancy: Hazardous by WHMIS criteria

Respiratory Tract Sensitization:

Carcinogenicity: This product contains Molybdate Orange Pigment [CAS #12656- 85-8] which contains lead chromate [CAS #7558-97 -6] as chromium compound [CAS #7440-47-3]. It is listed as a Group 2B carcinogen (possibly carcinogenic to humans) by IARC (International Agency for Research on Cancer).

Synergistic Materials: Insufficient data available.

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. Prolonged and repeated exposure of pregnant animals to toluene (levels greater than approximately 1500ppm) has been reported to cause adverse fetal developmental effects.

Teratogenicity: Insufficient data available.

Mutagenicity: Insufficient data available.

SECTION VII - PREVENTATIVE MEASURES

Gloves: Recommended gloves are chemical resistant. The recommended gloves for isopropanol are nitrile, neoprene, or natural rubber. The recommended gloves for ethanol is nitrile.

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.

Use material only with adequate ventilation to prevent exceeding the recommended exposure limit or a build- up of explosive concentrations in the air. Use explosion proof equipment. No smoking or open lights. Air-dry contaminated clothing in a well ventilated area before laundering.

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:

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas; run-off from fire control or dilution water may cause pollution. A vapour suppressing foam may be used to reduce vapours. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean, non-sparking tools to collect absorbed material.

Waste Disposal: Review federal, provincial and local government requirements prior to disposal. Use a licensed waste treatment facility or reclaimer.

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.

Special Precautions: Ground all equipment to prevent static discharge. Keep containers away from heat, sparks, and open flame. Wash thoroughly with soap and water after handling material.

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: Immediately flush eyes with a directed stream of water for at least 20 minutes, while holding eyelids open. If irritation or redness develops or persists, get medical attention.

Skin: Flush affected areas with large amounts of water, remove contaminated clothing. Wash affected areas thoroughly with soap and water. If irritation or redness develops or persists, get medical attention.

Inhalation: Remove victim to fresh air. If breathing difficulties develop, administer oxygen and get medical attention. If victim is not breathing, administer artificial respiration and get medical attention.

Ingestion: DO NOT INDUCE VOMITING. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs (Aspiration pneumonitis can be fatal). If victim conscious and alert, give victim lukewarm water. GET IMMEDIATE MEDICAL ATTENTION.

SECTION IX - PREPARATION AND ADDITIONAL INFORMATION

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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).