

MATERIAL SAFETY DATA SHEET

MSDS Name: DUOBOND LINE CERTO RED
 MSDS Number: 108T39281
 For customer: 01ALC1 ALCAN PACKAGING CANADA LIMITED
 MSDS Revision Date: JAN-06-2004 Printed Date: 01/06/04
 Page Number: 1 of 8

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SECTION I - PRODUCT IDENTIFICATION
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PRODUCT NAME: DUOBOND LINE CERTO RED

MANUFACTURER / SUPPLIER: FRONTIER PRINTING INKS LTD
 475 BOWES ROAD
 CONCORD ON L4K 1J5

EMERGENCY TEL. NO. (CANUTEC): (613) 996-6666

PRODUCT USE: PRINTING INK
 WHMIS CLASS(ES): B2, D2B
 SHIPPING CLASS, PKG.GRP.: 3, II

SHIPPING NAME: PRINTING INK
 UN/NA/PIN NUMBER: 1210

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SECTION II - HAZARDOUS INGREDIENTS
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Ingredient Name	CAS Number	Wt.Percent	TSCA(U.S.)	V.P.mmHg@20C
N-PROPYL ALCOHOL	71-23-8	10 - 30		14
ISOBUTANOL	78-83-1	10 - 30		9
ETHANOL	64-17-5	10 - 30		44
N-PROPYL ACETATE	109-60-4	5 - 10		24
ETHYL ACETATE	141-78-6	1 - 5		74

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SECTION III - PHYSICAL DATA
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Physical State / Appearance: RED LIQUID
 Specific Gravity (g/cm3): 0.88
 Odour: Solvent



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Odour Threshold (ppm): N/AV.
Product Density (lb/gal.): N/AP.
pH: N/AP.
Boiling Point/Range: 77.^oC - 107.^oC (170.6^oF - 224.6^oF)
Vapour Pressure (mmHg)@20 C: N/AV
Evaporation Rate: N/AV.

Vapour Density Heavier than air

Coefficient Oil/Water Dist.: N/AV.
Freezing Point: N/AV.

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point / Range (TCC): -4.^oC - 28.^oC (24.8^oF - 82.4^oF)
Expl. Limits Min/Max(%Vol.): 1.6%
19.%

-CONDITIONS OF FLAMMABILITY

This product may ignite if exposed to static electricity, open flames, sparks, or other sources of ignition.

-HAZARDOUS COMBUSTION PRODUCTS:

Fumes, smoke, and oxides of nitrogen and carbon are released. The following substances may be formed: methane, aldehydes, carboxylic acids, and hydrogen cyanide.

-EXPLOSION DATA - SENSITIVITY TO STATIC DISCHARGE:

Product expected to be sensitive to static discharge when vapour concentrations fall between lower and upper flammable limits. Ignition is possible.

- SENSITIVITY TO MECHANICAL IMPACT:

Not available.

-EXTINGUISHING MEDIA:

Dry chemical, carbon dioxide, water fog, or foam type extinguishers.

-SPECIAL FIREFIGHTING PROCEDURES:

Wear self-contained breathing apparatus (SCBA). Water may be used to cool surrounding containers, but care must be used to avoid spreading the fire. Fight from a safe distance, use caution when approaching.

-UNUSUAL FIRE AND EXPLOSION HAZARDS:

Vapours from product are heavier than air and may travel considerable distance to a source of ignition and flash back. Closed containers exposed to the heat of a fire may explode.



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SECTION V - TOXICOLOGICAL PROPERTIES

Occupational Exposure Limits

	ACGIH TLV	ACGIH STEL	OSHA STEL	OSHA PEL
N-PROPYL ALCOHOL	200.00 PPM	250.00 PPM	250.00 PPM	200.00 PPM
ISOBUTANOL	50.00 PPM	N/AV.	N/AV.	100.00 PPM
ETHANOL	1000.00 PPM	N/AV.	N/AV.	1000.00 PPM
N-PROPYL ACETATE	200.00 PPM	250.00 PPM	250.00 PPM	200.00 PPM
ETHYL ACETATE	400.00 PPM	N/AV.	N/AV.	400.00 PPM

Lethal Dose Information

Route	Species	Exposure and Dose
N-PROPYL ALCOHOL		
Inhalation	Rat, adult	LC50 24000. PPM
Oral	Rat, adult	LD50 1870. mg/kg
Skin	Rabbit, adult	LD50 5040. mg/kg
ISOBUTANOL		
Inhalation	Rat, adult	LC50 4 HOURS 8000. PPM
Oral	Rat, adult	LD50 2460. mg/kg
Skin	Rabbit, adult	LD50 3400. mg/kg
ETHANOL		
Inhalation	Rat, adult	LC50 4 HOURS 31623. PPM
Oral	Rat, adult	LD50 7060. mg/kg
Skin	Rabbit, adult	LD50 20000. mg/kg
N-PROPYL ACETATE		
Inhalation	Rat, adult	LD50 4 HOURS 8000. PPM
Oral	Rat, adult	LD50 9370. mg/kg
Skin	Rabbit, adult	LD50 > 5000. mg/kg
ETHYL ACETATE		
Inhalation	Rat, adult	LC50 4 HOURS 19600. PPM
Oral	Rat, adult	LD50 5620. mg/kg
Skin	Rabbit, adult	LD50 > 18000. mg/kg

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-EXPOSURE LIMITS:

Exposure limits for this product have not been determined. We suggest exposures be kept well below the permitted exposure limits of the ingredients listed above.

-EFFECTS OF ACUTE EXPOSURE:

INHALATION: Exposure to high concentrations of product vapour, mist or spray can cause respiratory tract irritation, coughing, difficulty in breathing, and central nervous system(CNS) depression. See "Other health Effects" in this section for symptoms of CNS depression.

EYES: Severe irritation, tearing, blurred vision can result from contact with liquid product or its vapours.

SKIN: Product is irritating to the skin. Product may be absorbed through the skin possibly causing CNS depression.

INGESTION: Severe irritation of the throat and mouth and possible gastrointestinal upset and abdominal pain. If large quantities are ingested, CNS depression will result, leading to possible death.

-EFFECTS OF CHRONIC EXPOSURE:

INHALATION: May cause liver damage, kidney damage, and CNS depression.

EYES: Severe irritation with possible corneal damage and conjunctivitis (characterized by redness).

SKIN: Dermatitis, drying or cracking due to defatting action of solvents through prolonged or repeated contact.

INGESTION: Not available.

-SENSITIZATION TO MATERIAL:

This product has not been tested.

-IRRITANCY OF MATERIAL:

Product will irritate eyes, skin, and upper respiratory tract, and may aggravate pre-existing skin, ocular, or respiratory conditions. Symptoms may not appear immediately, and damage may occur without the sensation of pain. Strict adherence to first aid measures following any exposure is essential.

-SYNERGISTIC MATERIALS:

The health effects of this product may be increased by exposure to chlorinated solvents, dithiocarbamates, thioacetamide, and dimethylnitrosamine.

Increased toxicity may occur when combined with exposure to

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formaldehyde.

-OTHER HEALTH EFFECTS:

Severe overexposures may lead to coma and possible death due to respiratory failure. Symptoms of one or more of the following characterize CNS depression: headache, dizziness, drowsiness, nausea, vomiting, and lack of coordination.

-OTHER HAZARDS:

CARCINOGENICITY: This product contains no ingredients in concentrations greater than 0.1% that are listed as confirmed or suspected human carcinogens by ACGIH (2000).

REPRODUCTIVE EFFECTS: Not available.

TERATOGENICITY: Not available.

MUTAGENICITY: Not available.

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SECTION VI - REACTIVITY DATA

-CHEMICAL STABILITY/PRECAUTIONS:

Product is chemically stable.

-REACTIVITY/CONDITIONS:

Product will not react under anticipated conditions of use and storage.

-INCOMPATIBILITY/PRECAUTIONS:

Avoid contact with strong acids, alkalies, amines, and oxidizing agents.

-HAZARDOUS DECOMPOSITION PRODUCTS:

Product will not decompose under normal conditions of use and storage.

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SECTION VII - PREVENTIVE MEASURES

-PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY PROTECTION: As a guideline, use NIOSH/MSHA-approved air-purifying respirator equipped with disposable filter cartridges designed for use in atmospheres containing up to 1,000 ppm of organic vapours. Wear self-contained



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breathing apparatus (SCBA) where levels of vapour exceed recommended exposure limits, or are unknown.

- EYE PROTECTION:** Always wear safety glasses with attached sideshields. Use full face-shield or splash goggles when there is potential for eye/face splashes. Contact lenses should not be worn when working with this product.
- SKIN PROTECTION:** Take all precautions to avoid contact, through use of impervious butyl rubber gloves, appropriate clothing and boots, and by discarding or laundering when contaminated. Confirm impermeability of other materials (e.g. neoprene, nitrile, PVC) prior to use, due to potential attack by one or more of the solvents in this product.
- OTHER:** Clothing and footwear that dissipate static electrical charges should be worn when handling flammable products. Natural fibres (e.g. cotton, wool, linen) should be selected over synthetics (e.g. polyester, acrylic, nylon).

-PROTECTIVE CONTROLS:

Ensure adequate ventilation to maintain exposures below recommended limits. Ventilation and electrical controls must be non-sparking and meet appropriate fire and electrical codes. Locate eyewash station and deluge shower close to product dispensing and handling areas.

-GENERAL PRECAUTIONS:

- STORAGE:** Store in closed containers in cool, well-ventilated areas. Hazardous product residue may remain in empty containers.
- HANDLING:** Avoid inhalation of vapours and splashing of product. All transfer equipment must be grounded. Use non-sparking tools.
- OTHER:** Do not take internally! Do not allow vapours to collect in low-lying areas such as sumps, pits, or trenches.

-SPILL OR LEAK PROCEDURE:

ELIMINATE OR TURN OFF ALL POTENTIAL SOURCES OF IGNITION IMMEDIATELY!

- Small Spills:** Absorb product with rags and place them in appropriate container approved for temporary storage of flammables.
- Larger Spills:** Ventilate area. Prevent product from entering sewers or watercourses. Absorb with commercial absorbents, sand, or earth. Sweep, or use non-sparking shovel to place into appropriate container approved for temporary storage of flammables. Consult authorities for disposal.

-WASTE DISPOSAL METHOD:



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Do not discharge into sewer or dispose in landfill site. Consult the proper authorities or professional contractors for disposal method.

SECTION VIII - FIRST AID MEASURES

-INHALATION:

Remove victim from exposure. Administer artificial respiration or oxygen if breathing has stopped. Get immediate medical attention.

-EYES:

Flush eyes for at least 30 minutes with water or sterile eyewash solution. Get immediate medical attention if irritation persists.

-SKIN:

Wash skin with soap and water. Get immediate medical attention if irritation persists.

-INGESTION:

Do not induce vomiting. Keep at rest. Get immediate medical attention.

SECTION IX - PREPARATION INFO

Prepared By: Kathleen Keller
Regulatory Administrator
Telephone / Fax: (905) 669-1311 / (905) 669-6299
MSDS Revision Date: 01/06/04

-SOURCES USED:

- 1) "SAX'S DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS", revised by RICHARD J. LEWIS, VAN NOSTRAND REINHOLD CO., N.Y., EIGHTH EDITION, 1994
- 2) "NPIRI RAW MATERIALS DATA HANDBOOK", J.M. PETSKO, NATIONAL PRINTING INK RESEARCH INSTITUTE, PENNSYLVANIA, VOL.1,2,3, 2nd. Ed. 1994
- 3) CURRENT MSD SHEETS FOR EACH RAW MATERIAL USED IN FORMULATING THIS PRODUCT, AND MANY GENERAL REFERENCE SOURCES IN ADDITION TO THOSE LISTED ABOVE

-ADDITIONAL INFORMATION:

Please contact Frontier Printing Inks Limited if more information is required.

NOTE:

THIS INFORMATION IS PROVIDED IN GOOD FAITH. ALTHOUGH IT IS BASED ON DATA FROM SOURCES DEEMED TO BE RELIABLE, FRONTIER PRINTING INKS LTD. CANNOT GUARANTEE ITS ACCURACY, AND ASSUMES NO RESPONSIBILITY FOR CONDITIONS RESULTING FROM ITS USE.



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