

APPLIED TECHNOLOGY DEVELOPMENTS LIMITED
K1, Valley Way
Welland Industrial Estate
MARKET HARBOROUGH
Leicestershire
LE16 7PS

MATERIAL SAFETY DATA SHEET

<i>MSDS Ref:</i> MSDS0109 <i>Valid from:</i> May 24 th 2005 (Checked by CMB)	EMERGENCY NUMBERS <i>Tel:</i> +44 1858 461014 <i>Fax:</i> +44 1858 461015
---	--

SECTION I - IDENTIFICATION

Product Identifier: Boardmark Blue LD

SECTION II - COMPOSITION

Description: A glycol based blue liquid ink with glycol ether co-solvent and dyes.

COMPONENT	CAS#	%	OSHA PEL	ACGIH TLV	Symbols	R-Phrase
Triethylene glycol	112-27-6	50-75	NE*	NE	Xi	R36/37/38
Diethylene glycol ethyl ether	111-90-0	5-10	NE	NE	Xi	R36
Polyalkylene glycol alkyl ether	Proprietary	10-20	NE	NE	None	None
Solvent blue dye salt	Proprietary	2.5- 5	NE	NE	Xn	R22
Other Non-Hazard	Proprietary	5-10	NE	NE	None	None

*Not established

Section 3: potential health effects. Section 11: available toxicity information. Section 15: regulatory information.

SECTION III - HAZARD IDENTIFICATION

Emergency Overview: May be harmful if swallowed. Irritating to eyes, skin, and respiratory tract.
NFPA Hazard Ratings: Health: 2 Flammability: 1 Reactivity: 0

Potential Health Affects

Eye Contact: Severe irritant. Can cause excessive redness and swelling, irritation and pain.
Skin Contact: Mild irritant. May cause some redness and itching.

Ingestion: Can cause dizziness, drowsiness, headache, nausea, mental confusion, slurred speech and stupor. Ingestion of large quantities may be harmful.
Inhalation: Not expected to be an irritant under normal operating conditions.
Chronic: None known

SECTION IV - FIRST AID MEASURES

Eye Contact: Flush with water. Remove contact lenses. Rinse with copious amounts of water for at least 15 minutes. Seek medical advice.
Skin Contact: Wash thoroughly with soap and water. Remove and launder contaminated clothing before reuse.
Ingestion: Never give anything orally to a person who is losing consciousness, unconscious or convulsing. If patient is conscious, give 2-4 glasses of water. Do not induce vomiting. Seek medical advice immediately.
Inhalation: Remove to fresh air. If breathing difficult, give oxygen. If symptoms persist seek medical advice.
In any case of persistent irritation, seek medical advice.

SECTION V - FIRE FIGHTING MEASURES

Flashpoint and Method: est 115°C [PMCC]
Flammable Limits: Not established
Autoignition Temperature: Not established
Extinguishing Media: CO2 or dry chemical, foam or water spray
Special Fire Fighting Procedures: Self contained breathing apparatus and full turn out gear.
Keep water out of streams and sewers.
Unusual Fire and Explosion Hazards: Fire can float on liquid. Fumes from burning materials are toxic and dangerous
Hazardous Decomposition Products: Oxides of Carbon and Nitrogen, acrylate monomers, and aldehydes.

SECTION VI - ACCIDENTAL RELEASE MEASURES

General: Wear proper protective equipment. Prevent runoff into waterways and sewers.
Spill: Contain and collect with absorbent. Dispose of properly according to local, regional and national regulations.

SECTION VII - HANDLING AND STORAGE

Keep away from children. Store in a cool (15-30°C), dry [<55%] area in closed containers. Do not store above 40°C for more than a week. Ventilate area well and keep material away from ignition sources. Keep from freezing and condensation. Shipping temperature 0-43°C.

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

- Exposure Limits:** None established for this ink.
- Engineering Controls (ventilation):** Good general room ventilation. Local exhaust only if necessary to maintain concentrations below the TLVs.
- Personal Protection:**
- Eye Protection:** Chemical goggles or shielded safety glasses should be worn.
- Skin Protection:** Chemical resistant gloves are recommended. Vinyl and disposable latex gloves are sufficient for short low level exposures. Butyl and PVC recommended for longer, higher exposure situations
- Respiratory:** If necessary, use NIOSH/MSHA approved respirator.
- Other:** Safety shower and eye wash must be available nearby.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

- | | | | |
|--------------------------------|---|--|-----------------|
| Appearance: | Opaque blue liquid with mild, characteristic odour. | | |
| Flammable Limits: | NE | | |
| Flashpoint and Method: | est 115°C (PMCC) | Autoignition Temperature: | NE |
| Vapour Pressure: | N.E | Evaporation Rate (n-butyl Acetate=1): | NE |
| Specific Gravity: | 1.09 approx | Percent Volatiles: | <85% |
| Solubility in water: | Very low | Boiling Point: | est >200°C |
| pH: | 7.0 approx | Vapour Density: | NE |
| Melting/freezing Point: | <-25°C | Viscosity (Brookfield): | 58 cps (@ 25°C) |

SECTION X - STABILITY AND REACTIVITY

- Stability:** stable
- Hazardous Polymerisation:** Will not occur.
- Conditions to avoid:** Ignition sources, sparks, static discharge, overheating
- Incompatibility:** Strong oxidizer, strong acids and bases.
- Hazardous Thermal**
- Decomposition Products:** Oxides of carbon and nitrogen, acrylate monomers, aldehydes

SECTION XI - TOXICOLOGICAL INFORMATION

- Acute Toxicity:** No acute testing has been done on this ink..
- | | |
|--------------------|---|
| Components | |
| Triethylene glycol | LD50 [oral, rat] > 17 g/kg
LD50 [skin, rabbit] > 2 g/kg |
| glycol ethers | LD50 [oral, rat] > 5 g/kg |
| solvent blue dye | LD50 [oral, rat] > 525 mg/kg |

No additional acute data available on components of this product.

Subchronic Effect: This ink has not been tested for subchronic toxicological effects.

Chronic effects/

carcinogenicity: This ink has not been tested for chronic toxicological effects.

Components Listed As Carcinogens By Regulatory Agencies:

OSHA: None Listed *IARC:* None Listed *NTP:* None Listed

Mutagenicity: This product has not been tested for mutagenic effects.

Reproductive Effects: This product has not been tested for reproductive effects.

SECTION XII - ECOLOGICAL INFORMATION

Ecotoxicological Information: No data available.

Chemical Fate Information: No data available.

SECTION XIII - DISPOSAL CONSIDERATIONS

Dispose of according to appropriate local, regional and national laws or regulations. Do not reuse "Empty containers".

SECTION XIV - TRANSPORT INFORMATION

Ground Transport: Not regulated

Air Transport: Not regulated

Ocean Transport: Not regulated

In event of Spill, Leak, Fire, Exposure or Accident call 800-424-9300 Day or Night – Collect Calls Accepted.

- (For calls outside USA ring 703-527-3887)

SECTION XV - REGULATORY INFORMATION

UNITED STATES

This product does not contain any ozone depleting substances (ODS), nor were any ODS's used in the manufacture of this product.

This ink was not tested for heavy metals covered under the various CONEG laws. However, raw materials used to make this ink do not contain mercury, lead, cadmium or hexavalent chromium, and none are added during manufacture.

TSCA [Toxic Substances Control Act]: All components are in the TSCA inventory.

EPA Hazard rating: Untested mixture with possible acute and chronic health hazards. Possible fire hazard.

SARA [Superfund Amendments and Reauthorization Act] 1986 Title III:

40CFR355 Chemicals requiring emergency planning - *None*

40CFR372 Chemicals present that may require submission of annual reports of toxic chemicals release : *glycol ethers* < 10 %

CAAA This ink contains the following ingredients considered hazardous air pollutants Under the Clean Air Act Amendments of 1990: *glycol ethers* 5-10%

STATES: California Proposition 65: Components present in this product known by the state Of California to cause cancer, birth defects, or other reproductive harm: NONE
California SCMQAD: As defined by this stature, this ink is estimated to contain <85% VOCs.
Pennsylvania Right to Know Hazardous Substance List: Components which Could require reporting under this statute are:...glycol ethers 5-10%.

CANADA

DSL [Domestic Substance List]: All components are in compliance with CEPA.

WHMI Classification: D2B

EUROPEAN UNION

EINECS Status: All components are in compliance with European inventory requirements.

CLASSIFICATION: This ink is classified as an irritant based on criteria found in EU Directives 67/548 and 88/379. [Xi R36/37/38 S23, S51]

SECTION XVI - OTHER INFORMATION

Revision Summary: This SDS is written in compliance with Directive 93/112EC.
REV.B – changes in section 2 & 15
REV. C – June 1998, changes made to sections 2 & 15
REV. D – November 1998, changes made to sections 9 & 15
REV.E – January 1999, changes to sections 1, 2, 3, 5 & 9
REV.F – January 2000, changes in section 1, 2, 11 & 15 due to reformulation
REV.G - May 2005; re numbered from old MSDS0048B to avoid confusion with MSDS 0048
REV H – May 2005; title changed to “Boardmark Blue LD” - as a further discriminator relative to other similar inks (customer suggestion)

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer any warranty against patent infringement.