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**LE16 7PS**

**MATERIAL SAFETY DATA SHEET**

MSDS Ref: MSDS0103  
Valid from: 31st October 2002  
*Checked D Watson*

**EMERGENCY NUMBERS**  
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**SECTION I - IDENTIFICATION**

**Product Identifier:** Waterfast Green III Ink

**SECTION II - COMPOSITION**

**Description:** A solvent based Green liquid.

COMPONENTS	CAS #	%[wt/wt]	OSHA	ACGIH PEL	Symbol TLV	R-phrase
Di-hydroxydiethyl ether	112-27-6	50-75	N.E.*	N.E.	Xi	R36/37/38
2,2' Dihydroxydiethyl ether	111-90-0	5-10	N.E.	N.E.	Xi	R36
Polyalkylene glycol alkyl ether	Proprietary	10-20	N.E.	N.E.	None	None
Solvent blue dye salt	Proprietary	5-10	N.E.	N.E.	Xn	R22
mixed copper and chrome complex**	proprietary	-15	NE	NE	Xi	R36
Other non-hazardous ingredients	Proprietary	5-10	N.E.	N.E.	None	None

\* Not established

\*\*Chrome Complex contains <2% trivalent chromium[equals <0.3% in the ink]. Phthalocyanine compound contains less than 5% copper (equals less than 1% in the ink)

Chromium is a necessary trace element both in the human body and in nature. Trivalent chromium compounds usually have very low orders of toxicity, are not carcinogenic, and are very little threat to the environment. Hex-avalent chromium compounds, however, are highly toxic, usually carcinogenic, and very damaging to the environment. The tri-valent chromium compound listed in this ink is safe when used as intended.

See section 3 for potential health effects. See section 11 for available toxicity information. See section 15 for regulatory information.

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**SECTION III - HAZARD IDENTIFICATION**

**Emergency Overview:** May be harmful if swallowed. Irritating to eyes, skin, and respiratory tract.

**Hazard Ratings: NFPA** Health: 2 Flammability: 1 Reactivity: 0

**Potential Health Affects**

<b>EYE CONTACT:</b>	Severe irritant. Can cause excessive redness and swelling, irritation and pain
<b>SKIN CONTACT:</b>	Mild irritant. May cause some redness and itching.
<b>INGESTION:</b>	Can cause dizziness, drowsiness, headache, nausea, mental confusion, slurred speech and stupor. Ingestion of large quantities may be harmful.
<b>INHALATION:</b>	Not expected to be an irritant under normal operating conditions.
<b>CHRONIC:</b>	None known

**SECTION IV - FIRST AID MEASURES**

**INGESTION:** Never give anything orally to a person who is losing consciousness, unconscious, or convulsing. If conscious, give 2-4 glasses of water. Do not induce vomiting. Seek medical advice.

**INHALATION** Remove to fresh air. For breathing difficulty, give oxygen. If symptoms persist, seek medical advice

**EYE CONTACT:** Rinse 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. Launder clothing before reuse.

**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:** Foam, dry chemical, Carbon dioxide and water spray.  
**SPECIAL FIRE FIGHTING PROCEDURES:** Self contained breathing apparatus and full turn-Protective equipment. Keep water out of streams and sewers.  
**UNUSUAL FIRE & 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 run off into waterways and sewers.  
**Spill:** Contain, collect with absorbent, and dispose of properly according to local, regional and national regulations.

## SECTION VII - HANDLING AND STORAGE

Keep away from children. Store at room temperature [10-40°C], in a dry [<55%] area in close 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 LIMIT:** None established for the ink.

**ENGINEERING CONTROLS(ventilation):** Good general room ventilation. Local exhaust only if necessary to maintain concentrations below the TLVs.

### PERSONAL PROTECTION:

**RESPIRATORY:** If necessary, use NIOSH/MSHA approved respirator.

**SKIN PROTECTION:** Chemical resistant gloves recommended. Vinyl and disposable latex sufficient for short low level exposures.

Butyl and PVC recommended for longer, higher exposure situations.

**EYE PROTECTION:** Safety glasses or chemical goggles required.

**OTHER:** Eye wash facility and safety shower must be available nearby.

## SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

<b>APPEARANCE:</b>	Blue liquid with a mild, characteristic odor.		
<b>FLASH POINT:</b>	est. 115°C [PMCC]	<b>AUTOIGNITION TEMPERATURE:</b>	N.E.
<b>FLAMMABLE LIMITS:</b>	N.E.	<b>pH:</b>	approx 7.0
<b>VAPOR PRESSURE</b>	N.E.	<b>EVAPORATION RATE:</b> (n-butyl acetate = 1)	N.E.
<b>SPECIFIC GRAVITY:</b>	approx. 1.09	<b>VAPOR DENSITY:</b>	N.E.
<b>BOILING POINT:</b>	est. >200°C	<b>PERCENT VOLATILES:</b>	estimate <85%
<b>F. P. / M. P.:</b>	<-25°C	<b>SOLUBILITY in water:</b>	very low
<b>VISCOSITY (Brookfield)</b>	about 63 cps @25°C		

## SECTION X - STABILITY AND REACTIVITY

**STABILITY:** stable

**HAZARDOUS POLYMERIZATION:** will not

**CONDITIONS TO AVOID:** Ignition sources, sparks, static discharge, overheating.

**INCOMPATIBILITY:** Strong oxidizer, strong acids and bases.

**HAZARDOUS DECOMPOSITION PRODUCTS:** oxides of carbon and nitrogen, acrylate monomers, aldehydes.



**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

<b>SECTION XVI - OTHER INFORMATION</b>
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**Revision Summary:**

This 16 part MSDS/SDS is written in compliance with Directive 93/112EC.

REV B. Incorporation of new information in sections 6, 7, 11 & 15

REV C. Addition of Canadian hazard rating information in section 15

REV D. January 1999 – changes to sections 1, 2, 3, 5, 9 & 15

**The information and recommendations contained in this document are based upon data believed to be correct. However, no guarantee of warranty of any kind, expressed or implied, is made with respect to this information.**