



U.S. Material Safety Data Sheet

European Safety Data Sheet

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Section 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Product Identifier: ITW 1555 Black ink
 Manufacturer: TRIDENT INTERNATIONAL, INC
 1114 Federal Road
 Brookfield, CT 06804-1140
 Telephone: +1 203-740-9333 Fax: +1 203-740-3527
 Emergency : Call CHEMTREC 1-800-424-9300 United States/ International 1-703-527-3887.

Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

DESCRIPTION: Black glycol based ink with glycol ethers as co-solvents.

COMPONENT	CAS#	%[wt./wt.]	OSHA PEL	ACGIH TLV	NIOSH REL	GERMAN MAK	Symbols	R-Phrase
Triethylene glycol	112-27-6	40-60	N.E.*	N.E.	N.E.	N.E.	Xi	R36/37/38
Butoxytriglycol	143-22-6	20-30	N.E.	N.E.	N.E.	N.E.	Xi	R36/37/38
triethylene glycol methyl ether	112-35-6	10-20	N.E.	N.E.	N.E.	N.E.	Xi	R36/37/38
Direct black 184	Proprietary	5-10	N.E.	N.E.	N.E.	N.E.	Xi	R36,41
Solvent black 29***	Proprietary	1-5	N.E.	N.E.	N.E.	N.E.	None	None

* Not established
 ***trivalent chromium concentration in this complex is 5.8%.
 Chromium is actually 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 not very harmful to the environment. Hexavalent chromium compounds, on the other hand, are highly toxic, usually carcinogenic, and very damaging to the environment. The trivalent chromium in this ink is safe when used as intended.

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

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This ink contains a component that is a severe eye irritant. Irritating to eyes, skin and respiratory tract. Avoid breathing vapors.
 NFPA Hazard Ratings: Health: 1 Flammability: 1 Reactivity: 0
 POTENTIAL HEALTH AFFECTS:
 EYE CONTACT: Testing has established that this ink is a moderate eye irritant. May cause redness, and pain.
 SKIN CONTACT: Symptoms of over-exposure include redness, swelling, pain .
 INGESTION: May cause nausea and vomiting.
 INHALATION: May cause coughing, nausea, sore throat.
 CHRONIC: Prolonged or widespread skin contact may result in the absorption of potentially harmful amounts of material. May cause skin burns and blisters. Chronic exposure may cause anemia and other blood effects. Ingestion of very large amounts of the ink may cause reproductive problems(see section 11).

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Section 4: EMERGENCY FIRST AID MEASURES
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EYE CONTACT:	Do not remove contact lenses. Flush with copious amounts of water for 15 minutes. Seek medical advice immediately.
SKIN CONTACT:	Wash with soap and water. Remove contaminated clothing and launder before reuse.
INGESTION:	Swallowing less than an ounce will not cause significant harm and does not require any emergency treatment. Nothing should be administered orally to a victim who is losing consciousness, unconscious or convulsing. Do not induce vomiting. For larger amounts, give one or two glasses of water to drink to a conscious patient. Seek medical advice.
INHALATION:	If exposed to excessive levels of vapor or mist, remove to fresh air. For breathing difficulty, give oxygen. If cough or other symptoms develop, seek medical advice. In any case of persistent irritation, seek medical advice.

SECTION 5: FIRE FIGHTING MEASURES
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FLASHPOINT AND METHOD:	>230°F (>110°C) PMCC (est.)
FLAMMABLE LIMITS:	None established.
AUTOIGNITION TEMPERATURE:	Not established
EXTINGUISHING MEDIA:	Dry chemical, Carbon dioxide, or regular foam.
SPECIAL FIRE FIGHTING PROCEDURES:	Wear self-contained breathing apparatus and full turn-out gear. Dike liquids to prevent run-off to sewers and waterways. Collect for disposal.
UNUSUAL FIRE & EXPLOSION HAZARDS:	Frothing may occur when a solid stream of water or foam is directed into hot burning pools.
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of Carbon and Nitrogen.

SECTION 6: ACCIDENTAL RELEASE MEASURES

GENERAL:	Wear appropriate protective clothing and equipment. Ensure disposal is in compliance with local, state and federal requirements. Notify the appropriate authorities immediately. Take additional action as necessary to prevent and remedy the adverse effects of the spill.
SPILL:	Dike spill. Absorb with inert material and collect for disposal. Flush area with water, ensuring that none escapes into waterways.

SECTION 7: HANDLING AND STORAGE
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Keep away from children. Avoid contact with skin and eyes. Keep containers closed. Store in a cool [40-120°F (4-49° C)], dry place away from heat and light. Keep from freezing.

SECTION 8: EXPOSURE CONTROLS & PERSONAL PROTECTION

EXPOSURE LIMITS:	No published exposure limits are available.
ENGINEERING CONTROLS(ventilation):	Normal room ventilation. Use local exhaust when application produces mists or aerosols.
PERSONAL PROTECTION:	
EYE PROTECTION:	Wear chemical splash goggles or shielded safety glasses. An eye wash should also be available.
SKIN PROTECTION:	Wear impervious gloves for operations where contact can occur. Vinyl disposable gloves are acceptable for limited exposures.
RESPIRATORY:	Usually not required in well ventilated area.
OTHER:	Wear proper protective clothing to limit skin contact if risk of contact is significant.

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SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE: black liquid with characteristic odor.	FLAMMABLE LIMITS: None established.
FLASHPOINT AND METHOD: >230°F PMCC (est.)	AUTOIGNITION TEMPERATURE: N.E.
VAPOR PRESSURE: <1.0 mm Hg	EVAPORATION RATE(n-butyl acetate = 1): <1.0
SPECIFIC GRAVITY: 1.09 approx.	PERCENT VOLATILES: <90% est.
SOLUBILITY: somewhat soluble	BOILING POINT: >300°F.
pH= 6.6 approx.	VAPOR DENSITY: Approximately 5.5 (est.)
MELTING/FREEZING POINT: <-10°C	VISCOSITY: approx. 58 cps @ 25°C

SECTION 10: STABILITY & REACTIVITY

STABILITY: stable	HAZARDOUS POLYMERIZATION will not occur.
CONDITIONS TO AVOID:	N.A.
INCOMPATIBILITY:	Alkalis (caustics) at elevated temperatures, acids and strong oxidizing agents.
HAZARDOUS THERMAL DECOMPOSITION PRODUCTS: Oxides of carbon and nitrogen	

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY: This ink has not been tested for acute toxicological effects.

COMPONENTS: Triethylene glycol: Oral: LD50(rat) >16.0 g/kg
triethylene glycol methyl ether Oral: LD50(rat) >3.8 g/kg
butoxitriglycol Oral: LD50(rat) 5.3 g/kg
Azoamine salt Oral: LD50(rat) >2g/kg Dermal LD50(rat) >2 g/kg
Solvent black 29 Oral: LD50 (rat) >5 g/kg Dermal LD50 (rat) >2 g/kg

No other oral toxicity data available on components of this ink.

SUBCHRONIC EFFECTS: This ink has not been tested for subchronic toxicological effects.

CHRONIC EFFECTS/CARCINOGENICITY: This ink has not been tested for chronic effects.

COMPONENTS: Rats fed 4% triethylene glycol in their diet over a period of 2 years showed no apparent effect.

COMPONENTS LISTED AS CARCINOGENS BY REGULATORY AGENCIES:
OSHA: NONE LISTED IARC: NONE LISTED NTP: NONE LISTED.

MUTAGENICITY: This ink has not been tested for mutagenic effects.
COMPONENTS: Solvent Black 29 Ames Test - Positive
Hamster and mouse micronucleus - non-mutagenic
Chinese Hamster V79GHGPRT - non-mutagenic

In a case like this where the Ames test was positive, but all the subsequent mammalian studies were negative, the chemical is not considered a human mutagen.

REPRODUCTIVE EFFECTS: This ink has not been tested for reproductive effects.
COMPONENTS: Triethylene glycol methyl ether [TGME]
When laboratory animals were fed large doses of TGME in their water for 90 days, the chemical caused testicular degeneration and atrophy in male animals.. A similar 90 day study conducted to evaluate dermal exposure to TGME did not produce similar findings.

According to the manufacturer, the size of the oral dose required to produce this effect makes it highly unlikely that exposure during normal industrial handling and use would be sufficient to cause the effect.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: No data available for the ink.

COMPONENTS Triethylene glycol : LC50>100mg/L
Solvent black 29 LC50 [96 hrs., Carp] 2.0 mg/l
Daphnia toxicity: No sign of adverse affects @1000 mg/l for 24 hrs.

CHEMICAL FATE INFORMATION: No data available for the ink

COMPONENTS: Triethylene glycol ThOD = 1.6 p/p BOD(20 day) = 0.27 p/p

Note: p/p = units of oxygen needed per unit of material. ThOD is Theoretical Oxygen Demand.
BOD is Biological Oxygen Demand.

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SECTION 13: DISPOSAL CONSIDERATIONS

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

SECTION 14: TRANSPORT INFORMATION: (Not meant to be all inclusive)

GROUND TRANSPORT: NOT REGULATED OCEAN TRANSPORT: NOT REGULATED.
AIR TRANSPORT: NOT REGULATED.

SECTION 15: REGULATORY INFORMATION(Not meant to be all inclusive)

UNITED STATES

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

Trident does not test for heavy metals covered under the various CONEG laws. However, raw materials used to make our inks 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.

OSHA[Occupational Safety and Health Act]: Untested mixture with acute health hazards.

SARA [Superfund Amendments and Reauthorization Act] 1986 Title III

40CFR355 - Chemicals present requiring emergency planning based on Threshold Planning Quantities (TPQ) and release reporting based on Reportable Quantities (RQ)-----NONE

40CFR372 - Chemicals present that require submission of annual reports of release of toxic chemicals that appear in this section of SARA Title III.

--Solvent black 29 trivalent chromium complex 1-5% -----glycol ethers 30-40%

CAAA - This ink contains the following ingredients considered Hazardous Air Pollutants under the Clean Air Act of 1990

.....Solvent black 29 trivalent chromium complex

.....Glycol ethers - 30-40% .

STATE REGULATIONS:

California Proposition 65: Components present in this product known by the state of California to cause birth defects or other reproductive harm:---ethylene glycol monoethyl ether <0.01%

California SCMQAD: As defined by this statute, this ink is estimated to contain <90% VOCs.

Massachusetts 105CMR670 Right to Know (MSL): There are no components present which require reporting under this statute.

Pennsylvania Right to Know Hazardous Substance list: Components of this ink which could require reporting are:

---Solvent black 29Chromium (+3)complex - 1-5%

---glycol ethers - 30-40%

New Jersey Registration # TRDTINTL-978005

CANADA

DSL/nDSL All components are listed.

WHMIS classification: D2B

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

EUROPEAN UNION

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

CLASSIFICATION: This product is considered an irritant based on criteria found in EU

Directives 67/548 and 88/379. [Xi, R36/37/38/52-53 S36,37,39,62]

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SECTION 16: OTHER INFORMATION.

REVISION SUMMARY: Released October 17, 2005

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

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