



Material Safety Data Sheet

Product Name: Z-8351**Date:** 6/17/2003**Supersedes:** 3/4/2003

1. PRODUCT AND COMPANY IDENTIFICATION

Manufacturers Name: Development Associates, Inc.
300 Old Baptist Rd.
North Kingstown, RI 02852

Emergency Phone No: Chemtrec (800) 424-9300 24 Hour

Product Name: Z-8351 Flowstop

Chemical Family/Name: Ink

Trade Name: Silkscreen Ink

2. COMPOSITION / INGREDIENT INFORMATION

Component	CAS #	%	Exposure limits(source)
Benzene, 1,2-chloro-4-(trifluoromethyl)-	328-84-7	50-75%	n/e (5)
2-ethylhexyl alcohol	104-76-7	10-25%	50 ppm(1)
Ethylcellulose	9004-57-3	10-25%	n/e (5)
Fluoropolymer Resin	proprietary	2-10%	n.e (5)
Aliphatic Hydrocarbon	8052-41-3	5-10%	100 ppm(1)(2)

Source of Exposure Limit Data: 1 ACGIH Threshold Limit Values 2. Federal OSHA Permissible exposure limit 3. DA Exposure Guidelines 4. Chemical Manufacturer Recommended Guidelines 5. None Established **Abbreviations:** n/a - not applicable, n/d - not determined.

3. HAZARDS IDENTIFICATION

HMIS HEALTH 1, FIRE 2, REACTIVITY 0

Threshold Limit Value: Not established by ACGIH or OSHA, see Section 2 for component materials.

Routes of Entry: Inhalation, Eyes, Skin, Ingestion.

Signs and Symptoms of Exposure:

Eyes: Irritation, redness.

Skin: May cause allergic skin reaction, irritation.

Ingestion: Harmful if swallowed. May cause liver and kidney damage.

Inhalation: Irritation of respiratory tract, coughing. May produce symptoms of central nervous system depression, including: headache, dizziness, nausea, loss of balance, drowsiness.

Chronic Effects of Exposure: Skin irritation, liver, kidney damage.

Carcinogenicity: Not known to be carcinogenic

4. FIRST AID MEASURES

Emergency and First Aid Procedures:

Eyes: Immediately flush with large amounts of water for 15 minutes, hold eyelid apart to ensure irrigation. Get medical attention.

Skin Contact: Wash skin thoroughly with soap and water. Remove contaminated clothing and wash thoroughly before reuse.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. CALL A PHYSICIAN IMMEDIATELY.

Ingestion: Aspiration Hazard. If swallowed, DO NOT INDUCE VOMITING! Give large quantities of water. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Get medical attention immediately. If vomiting occurs, keep head below hips to prevent aspiration into lungs.

5. FIRE AND EXPLOSION DATA**Flash Point** 142°F (61.11°C) TCC**Flammable Limits in Air % Volume** Upper: 10-12% Lower: .25-1%**Extinguishing Media:** Foam, Dry Chemical, CO2**Unusual Fire and Explosion Hazards:** Will burn. May be ignited by heat, sparks, flames. Vapors are flammable and may spread away from spill. Irritating and/or toxic gasses may be generated by thermal decomposition or combustion. May release hydrogen chloride or hydrogen fluoride under fire conditions.**Special Fire Fighting Procedures:** Full emergency equipment with self-contained breathing apparatus should be worn by fire fighters. Use cold water spray to cool fire exposed containers to minimize risk of rupture.**6. ACCIDENTAL RELEASE MEASURES**

Steps to be Taken in Case Material is Released or Spilled: Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

7. HANDLING AND STORAGE**Precautions to be Taken in Storage and Handling:** Store away from sources of ignition in well ventilated area. Keep in tightly closed containers to prevent contamination with foreign material**Storage Temperatures** Store at temperatures between 30° and 120°F.**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Eye Protection:** Chemical Splash goggles.**Skin Protection:** Rubber gloves and apron.**Ventilation and Respiratory Protection:** Explosion proof ventilation as required to maintain air concentrations below the TLV. Self contained or organic vapor respirator.**Other:** Safety showers and eye wash stations should be available.**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	Hazy liquid
Color	Tan
Odor	Strong solvent odor
Boiling Range	350°F.-450°F.
Melting Point	Sets to glass <30°F.
Evaporation Rate(BuAcet.=1)	1
Vapor Density (air=1)	>1
Weight per Gallon	10.096 lbs/gal
Specific Gravity	1.2115
Solubility in Water(%)	slight
Percent Volatile	75-85%

10. STABILITY AND REACTIVITY**Stability** Stable**Conditions to Avoid** Contact with open flame**Incompatibility (materials to avoid)** Oxidizers, strong acids or bases.**Hazardous Polymerization** Will not occur.**Hazardous Decomposition Products** CO., CO2, HF, partially decomposed hydrocarbons, undetermined irritating and/or toxic gasses, vapors and fumes may be liberated on burning or thermal decomposition.**11. TOXICOLOGICAL INFORMATION**

Benzene, 1,2-chloro-4-(trifluoromethyl)- (CAS# 328-84-7): Rat, Oral LD50:2900 mg/kg, Dermal Rabbit LD50: >2g/kg, Inhalation Rat LC50: 4 hr, >1919 ppm, Rabbit, eye: slight; Rabbit, skin, slight.

2-ethylhexyl alcohol (CAS# 104-76-7): Rat, Oral LD50: 3730/kg, Skin, Rabbit LD50: 1970 mg/kg, Irritation Eye Rabbit: 20 mg Severe.

Ethylcellulose (CAS# 9004-57-3): Acute Oral Rat LD50: >5g/kg, Dermal Rabbit LD50: >5g/kg. Slightly irritating to intact or abraded skin of rabbits when applied full strength under occlusion for 24 hours.

Aliphatic Hydrocarbon (CAS# 8052-41-3): No information available

12. ECOLOGICAL INFORMATION

Benzene, 1,2-chloro-4-(trifluoromethyl)- (CAS# 328-84-7): Limited information available on environmental fate and effects. Limited laboratory toxicity data indicate moderately toxic to terrestrial organisms, while it may be highly toxic to aquatic species. Aquatic toxicity may be somewhat tempered by the low water solubility *(15 mg/L). Limited data indicates the bioaccumulation factor ranges between 280 and 2800. May persist in soils and sediments due to hydrophobic nature. Its relatively high vapor pressure indicates that it will be subject to volatilization losses from both water and soil. Not expected to be highly reactive under atmospheric conditions, may be persistent in air. Due caution should be exercised to avoid the accidental release of this material to aquatic and terrestrial environments.

2-ethylhexyl alcohol (CAS# 104-76-7): No ecological information available

Ethylcellulose (CAS# 9004-57-3): No ecological information available

Aliphatic Hydrocarbon (CAS# 8052-41-3): No ecological information available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: If discarded in its purchased form, this product is not hazardous waste either by listing or by characteristic. However, processing, use or contamination of this product may change its hazardous waste status. Under RCRA, it is the responsibility of the product user to determine, at the time of disposal, whether a material is a hazardous waste. State and local disposal regulations may differ from federal disposal regulations. Dispose in accordance with all federal, state, and local waste disposal laws and regulations. Incineration is the preferred method.

14. TRANSPORT

D.O.T. Shipping Name	Ink, Combustible liquid (not regulated in non bulk packages per CFR 49 173.150 (f) (2))
IATA, IMO Shipping Name	None
Technical Shipping Name	Printing Ink
D.O.T. Hazard Class	Combustible Liquid (not regulated in non bulk packages per CFR 49 173.150 (f) (2))
IATA' IMO Hazard Class	None
UN/NA Number	NA-1993 (DOT) (not regulated in non bulk packages per CFR 49 173.150 (f) (2))
D.O.T. Labels Required	none in containers less than 110 gallons. (not regulated in non bulk packages per CFR 49 173.150 (f) (2))
IATA, IMO	None
NMFC Item	Ink, Printing, NOI 101760-3 Class 55

15. REGULATORY

All components of this mixture are listed in the TSCA inventory.

For details on regulatory requirements you should contact the appropriate agency in your state.

16. OTHER

This data is offered in good faith as typical values and not as a product specification. The information in this data sheet was compiled from information supplied by the vendors of the components of this compound. No warranty, either expressed or implied is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

The information on this data sheet is only to assist in the safe handling of this material, and may contain trade secrets which may not be divulged to anyone except the users of this material and health care and hygiene professionals as required for its safe use. No license or permission to infringe any patent or breach any trade secret is given.