



# Material Safety Data Sheet

<b>NFPA</b> 	<b>HCS Risk Phrases</b> Not controlled under the HCS (United States).	<b>Protective Clothing</b> 
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## Section I. Chemical Product and Company Identification

<b>Common Name/ Trade Name</b> <b>BENZOFLEX® 2088</b>	<b>In case of Emergency</b> In the continental U.S.A. call CHEMTREC 1-800-424-9300 (24 hours)  Outside the continental U.S.A call CHEMTREC 1-703-527-3887 (24 hours)
<b>Supplier</b> Velsicol Chemical Corporation 10400 W. Higgins Road Rosemont, IL 60018 U.S.A. Phone (847) 298-9000 FAX (847) 298-9015	<b>Manufacturer</b> Velsicol Chemical Corporation 10400 W. Higgins Road Rosemont, IL 60018 U.S.A. Phone: 847-298-9000 FAX: 847-298-9015
<b>Synonym</b> Not available. <b>Chemical Name</b> Not applicable. <b>Chemical Family</b> Aromatic ester. <b>Chemical Formula</b> Not applicable.	<b>Material Uses</b> Not available.

## Section II. Composition and Information on Ingredients

Name	CAS #	% by Weight	TLV/PEL	OSHA Hazardous Ingredients
Diethylene Glycol Dibenzoate	120-55-8	50	Not available.	No
Dipropylene Glycol Dibenzoate	27138-31-4	25	Not available.	No
Triethylene Glycol Dibenzoate	120-56-9	25	Not available.	No

## Section III. Hazards Identification

<b>Emergency Overview</b>	Clear, colorless Liquid Ester-like odor. <b>HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICES.</b>
<b>Potential Health Effects</b>	Inhalation and skin contact are expected to be the primary routes of occupational exposure to Benzoflex 2088. This material is not expected to cause significant adverse health effects when good industrial hygiene and safety practices are followed. Repeated or prolonged exposure to this material is not known to aggravate any existing medical conditions.

## Section IV. First Aid Measures

<b>Eye Contact</b>	Flush with plenty of water. Seek medical attention if irritation persists.
<b>Skin Contact</b>	Flush the area with plenty of water. Remove material from clothing. Wash clothing before reuse.
<b>Inhalation</b>	Remove to fresh air.
<b>Ingestion</b>	If swallowed, induce vomiting as directed by medical personnel. Get medical attention. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

MARKETING BY  
**HARWICK STANDARD**  
**DISTRIBUTION CORPORATION**  
 60 S. Seiberling Street - Akron, Ohio 44305  
 Akron - Chicago - Northeast - Southern - West Coast

**Continued on Next Page**

6/24/97

**Section V: Fire and Explosion Data**

Flammability of the Product	Combustible.
Auto-Ignition Temperature	Not available.
Flash Points	Closed Cup 420°F (ASTM D92)
Flammable Limits	Not available.
Fire and Explosion Hazards	The products of combustion are carbon oxides (CO, CO <sub>2</sub> ).
Fire Fighting Media and Instructions	<p>SMALL FIRE: Use DRY chemicals, CO<sub>2</sub>, water spray or foam.                  LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.</p> <p>Firefighters and others who may be exposed to products of combustion should wear full firefighting turnout gear and self contained breathing apparatus. Firefighting equipment should be thoroughly decontaminated after use.</p>

**Section VI: Accidental Release Measures**

Small Spill	Absorb with an inert material and put the spilled material in an appropriate waste disposal container.
Large Spill	Stop leak if without risk. Contain spilled liquid with diking. Keep away from heat. Keep away from sources of ignition. Absorb with an inert material and put the spilled material in an appropriate waste disposal container.

**Section VII: Handling and Storage**

Handling	Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of material from eyes, skin and clothing. Keep away from heat, sparks, and sources of ignition.
Storage	Store in well ventilated area away from sources of ignition.

**Section VIII: Exposure Controls/Personal Protection**

Engineering Controls	Investigate engineering techniques to reduce exposures. Provide ventilation if necessary to minimize exposure. If practical use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.
Personal Protection	Safety glasses. Lab coat. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Section IX: Physical and Chemical Properties**

Physical state and appearance	Liquid
Color	Clear, colorless
Odor	Ester-like odor.
Boiling Point	Not available.
Melting Point	May solidify at < 0°C
Critical Temperature	Not available.
Specific Gravity	1.1561 (Water = 1)
Vapor Pressure	Not available.

Vapor Density	Not available.
Volatility	Not available.
Odor Threshold	Not available.
Evaporation rate	Not available.
Viscosity	90 cP at 25°C
Solubility	Not available.
pH (1% soln/water)	Neutral.
Molecular Weight	Not applicable.

**Section X: Stability and Reactivity Data**

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	No additional remark.
Incompatibility with various substances	Not available.
Corrosivity	Not considered to be corrosive for metals and glass according to our database.
Hazardous Polymerization	Will not occur.
Hazardous Decomposition Products	Not available.

**Section XI: Toxicological Information**

**Toxicity to Animals** Velsicol Chemical Corporation has not conducted toxicity tests on Benzoflex 2088; however, toxicity tests have been conducted on each of the components and the results are summarized below.

**Diethylene Glycol Dibenzoate**

Acute oral toxicity (LD50): 2336-3969 mg/kg (Rat), Slightly toxic.  
 Acute dermal toxicity (LD50): 20,000 mg/kg (Rabbit), Practically non-toxic.  
 Acute toxicity of the vapor (4 hr LC50): >200 mg/l (Rat), Practically Non-toxic.  
 Practically Non-irritating to eyes (Rabbit)(0.93/110.0)  
 Practically Non-irritating to skin (Rabbit)(0.3/8.0)

No genetic changes were reported in standard test (Ames) using Salmonella or Saccharomyces, both with and without mammalian metabolic activation. No effects were reported in rats or dogs after administration of up to 300 mg/kg/day (dogs) and 1000 mg/kg/day (rats) for 90 days in their diet.

**Dipropylene Glycol Dibenzoate**

Acute oral toxicity (LD50): 4068-9800 mg/kg (Rat), Slightly to Practically Non-toxic  
 Acute oral toxicity (LD50): 4068-5700 mg/kg (Mouse), Slightly to Practically Non-toxic  
 Acute dermal toxicity (LD50): > 2000 mg/kg (Rabbit), No More Than Slightly Toxic  
 Acute toxicity of the mist (LC50): > 200 mg/L (Rat), Practically Non-toxic  
 Practically Non-irritating to Eyes (Rabbit)(0.6/110.0)  
 Practically Non-irritating to Skin (Rabbit)(0.5/8.0)

No genetic changes were reported in standard tests (Ames) using Salmonella and Saccharomyces, both with and without mammalian metabolic activation. Toxicity was observed in two Salmonella strains. No effects were reported in dogs administered up to 1.2% in their diet for 90 days. Decreased body weight gain and food consumption, depression, tremor and death were reported in rats administered 4.0% in their diet for 90 days. No effects were reported at the 0.5%

and 1.0% dose levels.

**Triethylene Glycol Dibenzoate**

Acute oral toxicity (LD50): >11,680 mg/kg (Rat), Practically non-toxic  
 Practically non-irritating to skin (rabbit) (0.3/8.0)  
 Practically non-irritating to eyes (rabbit) (1.96/110.0)

This material is readily and rapidly absorbed from the gastrointestinal tract of dogs and rats and its metabolites are rapidly excreted.


**Section XII: Ecological Information**

<b>Ecotoxicology</b>	No data available.
<b>Chemical Fate</b>	Velsicol Chemical Corporation has not conducted chemical fate tests on Benzoflex 2088; however, chemical fate tests have been conducted on each of the components and the results are summarized below.  <b>Diethylene Glycol Dibenzoate</b>  BOD5 = 100 mg/l log Kow = 2.77  <b>Dipropylene Glycol Dibenzoate</b>  BOD5 = 110 ppm  <b>Triethylene Glycol Dibenzoate</b>  log Kow = 2.77 (estimate)



**Section XIII: Disposal Considerations**

<b>Waste Disposal</b>	Recycle, if possible. Consult your local or regional authorities for disposal options.
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**Section XIV: Transport Information**

<b>DOT Proper Shipping Name</b>	Not applicable.
<b>DOT Hazard Class</b>	Not a DOT controlled material (United States).
<b>UN Identification Number</b>	Not applicable.
<b>DOT (Pictograms)</b>	
<b>Packing Group</b>	Not applicable.

**Section XV: Other Regulatory Information and Pictograms**

<b>Federal and State Regulations</b>	No additional remark.																		
<b>Other Classifications</b>	WHMIS (Canada) Not controlled under WHMIS (Canada).																		
	WHMIS (Canada) (Pictograms)																		
	TDG (Canada) (Pictograms)																		
<b>HMIS (U.S.A.)</b>	<table border="1"> <tr><td>Health Hazard</td><td>1</td></tr> <tr><td>Fire Hazard</td><td>1</td></tr> <tr><td>Reactivity</td><td>0</td></tr> <tr><td>Personal Protection</td><td>0</td></tr> </table>	Health Hazard	1	Fire Hazard	1	Reactivity	0	Personal Protection	0	<b>National Fire Protection Association (U.S.A.)</b>	<table border="1"> <tr><td>Health</td><td>1</td></tr> <tr><td>Fire Hazard</td><td>1</td></tr> <tr><td>Reactivity</td><td>0</td></tr> <tr><td>Specific hazard</td><td></td></tr> </table>	Health	1	Fire Hazard	1	Reactivity	0	Specific hazard	
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Personal Protection	0																		
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Fire Hazard	1																		
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Specific hazard																			

**Section XVI: Other Information**

<b>References</b>	<ul style="list-style-type: none"> <li>-REGISTRY Database, Chemical Abstract Service</li> <li>-CHEMLIST Database, Chemical Abstract Service</li> <li>-Registry of Toxic Effects of Chemical Substances (RTECS)</li> <li>-Chemical Hazard Response Information System (CHRIS), Micromedex Inc., Vol. 27.</li> <li>-LOLI Database, Chem Advisor via Micromedex Inc.</li> <li>-ICRMS European Database, Ariel Research Corporation</li> <li>-ICRMS Inventories Database, Ariel Research Corporation</li> <li>-Velsicol Chemical Corporation, unpublished studies</li> <li>-Product Information Bulletin, Velsicol Chemical Corporation</li> <li>-Hazardous Substance Data Bank (HSDB), National Library of Medicine</li> <li>-MEDITEXT Medical Management Database, Micromedex Inc., Vol. 28</li> <li>-Syracuse Research Corporation. EPI-WIN Estimation Programs.</li> </ul>		
<b>Other Special Considerations</b>	No additional remark		
<b>Validated by Amy M. Bredbenner on 6/24/97.</b>	<b>Verified by Amy M. Bredbenner.</b>		
<b>Supersedes 06/24/97</b>	<b>Printed 2/25/98.</b>		
<b>Revision</b>	Revised Section 7		

**Notice to Reader**  
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