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# HASTINGS PLASTICS COMPANY

1704 Colorado Ave. Santa Monica, CA 90404 310-829-3449 FAX 310-828-6820

MATERIAL SAFETY  
DATA SHEET  
MSDS 1950-1A H  
\*Revised 04/19/94  
Replaces 11/23/93

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## HAFLEX 1950-1A HARDENER

### SECTION I - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME - HASTINGS PLASTICS COMPANY  
PRODUCT INFO/SALES - (310) 829-3449  
EMERGENCY PHONE NUMBER - 24 HOURS (800) 424-9300  
PRODUCT NAME - Haflex 1950-1A Hardener  
PRODUCT CODE NUMBER - 1950-1A Hardener  
CHEMICAL FAMILY - Aromatic Isocyanate  
CHEMICAL NAME - Diphenylmethane Diisocyanate (MDI) or  
SYNONYMS - Methylene Diphenyl Diisocyanate

### SECTION II - HAZARDOUS INGREDIENTS

<u>COMPONENTS</u>	<u>CAS #</u>	<u>%</u>
DIPHENYLMETHANE DIISOCYANATE (MDI) Containing Methylene bisphenyl isocyanate, CAS# 000101-68-8 (See regulatory Information Page)	026447-40-5	70 - 80
DIPHENYLMETHANE DIISOCYANATE (HOMOPOLYMER)	039310-05-9	20 - 30
TRIETHYL PHOSPHATE	000078-40-0	< 2%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not "Hazardous" per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

### SECTION III - PHYSICAL DATA

APPEARANCE - Light yellow liquid.  
BOILING POINT - 597°F (decomposes).  
VAPOR PRESSURE - 0.0003 mm hg @ 25°C.  
VAPOR DENSITY - Not determined.  
SPECIFIC GRAVITY - 1.2  
SOLUBILITY IN WATER - Reacts.  
VOC CONTENT (Gms/Lit) - N/A

### SECTION IV - FIRE AND HAZARD EXPLOSION DATA

FLASH POINT °F  
(Method Used) - >350°F, 177°C (PMCC).  
FLAMMABLE LIMITS - LEL: Not determined.  
UEL: Not determined.

**EXTINGUISHING MEDIA:**

Carbon Dioxide, dry chemical, or foam. For Large scale fires, alcohol resistant foams are preferred if available. General Purpose synthetic foams or protein foams may function, but much less effectively. Water may

be used as a blanket for fire extinguishment. If water is used, it should be used in very large quantity. The reaction between water and isocyanate may be vigorous. If possible, contain fire runoff water.

**SPECIAL FIRE FIGHTING PROCEDURES:**

People who are fighting isocyanate fires must be protected against nitrogen oxide fumes and isocyanate vapors by wearing positive pressure self-contained breathing apparatus and full protective clothing.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Down-wind personnel must be evacuated. Do not reseal contaminated containers as pressure buildup may rupture them. A chemical reaction generating CO<sub>2</sub> gas pressure may occur resulting in rupture of the container. Dense smoke emitted when burned without sufficient oxygen. When using water spray, boil over may occur when the product temperature reaches the boiling point of water and the reaction forming CO<sub>2</sub> will accelerate (tank type scenarios, not spills).

**SECTION V - REACTIVITY DATA**

**STABILITY** - Stable under recommended storage conditions.

**HAZARDOUS POLYMERIZATION:**

May occur with incompatible reactants especially strong bases (alkalies, tertiaryamines, metal salts), water, or temperature over 160°C (320°F). Temperatures over 49°C (120°F) accelerate the reaction with water.

**INCOMPATIBILITY:**

Water, acid, base (alkalies, ammonia), alcohols, metal compounds, surface active materials. Avoid water as it reacts to form heat, CO<sub>2</sub>, and insoluble urea. The combined effect of the CO<sub>2</sub> and heat can produce enough pressure to rupture a closed container. The reaction with water is slow at temperatures less than 49°C (120°F), but accelerated at higher temperatures and in the presence of the above mentioned materials. Some reactions are violent.

**HAZARDOUS DECOMPOSITION:**

Isocyanate vapor and mist, carbon dioxide, carbon monoxide, nitrogen oxides, and traces of hydrogen cyanide.

**SECTION VI - HEALTH HAZARD DATA****EYE EFFECTS:**

May cause slight eye irritation. Corneal injury is unlikely.

**SKIN EFFECTS:**

Prolonged or repeated exposure may cause skin irritation. May stain skin. Skin contact may result in allergic skin reactions or respiratory sensitization but is not expected to result in absorption of amounts sufficient to cause other adverse effects.

**SKIN ABSORPTION:**

The LD<sub>50</sub> for skin absorption in rabbits is > 2000mg/kg.

**INGESTION:**

Single dose oral toxicity is low. The oral LD50 for male rats is >5,000mg/kg. No hazards anticipated from ingestion incidental to industrial exposure.

**INHALATION:**

At room temperature, vapors are minimal due to low vapor pressure. However, certain operations may generate or aerosol concentrations sufficient to cause irritation or other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venation or pumping. Excessive exposure may cause irritation of the eyes, upper respiratory tract, and lungs. May cause respiratory sensitization in susceptible individuals. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Symptoms may include coughing, difficulty in breathing, and a feeling of tightness in the chest. Effects may be delayed. Impaired lung function (decreased ventilatory capacity) has been associated with overexposure to isocyanates.

**SYSTEMIC AND OTHER EFFECTS:**

Lung injury has been observed in laboratory animals after repeated excessive exposure to MDI/ polymeric MDI aerosol droplets.

**CANCER INFORMATION:**

Lung tumors have been observed in laboratory animals exposed to aerosol droplets of MDI/Polymeric MDI (6 mg/m<sup>3</sup>) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects.

**MUTAGENICITY (EFFECTS ON GENETIC MATERIAL):** Mutagenicity data on MDI are inconclusive. MDI was weakly positive in some vitro (test tube) studies; other in vitro studies were negative. A mutagenicity study in animals was negative.

**SECTION VII - EMERGENCY AND FIRST AID PROCEDURES****INHALATION**

- Remove to fresh air. If not breathing, give mouth-to-mouth resuscitation. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**EYE CONTACT**

- Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel. Materials containing MDI may react with the moisture of the eye forming a thick material which may be difficult to wash from the eye.

**SKIN CONTACT**

- Wash off in flowing water or shower.

**INGESTION OF FLUID**

- No adverse effects anticipated by this route of exposure incidental to proper industrial handling.

**NOTE TO PHYSICIAN:**

No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient. The manifestations of respiratory symptoms, including pulmonary edema, resulting from acute exposure may be delayed. May cause respiratory sensitization.

SECTION VIII - HANDLING PRECAUTIONS

## EXPOSURE GUIDELINE(S):

ACGIH/TLV is 0.005 ppm TWA and OSHA/PEL is 0.02 ppm ceiling for methylene biphenyl isocyanate (MDI).

## VENTILATION:

Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

## RESPIRATORY PROTECTION:

Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. If vapor exposure causes eye discomfort, use a full-face respirator.

## EYE PROTECTION:

Use safety glasses. Where contact with this material is likely, chemical goggles are recommended, because eye contact may cause pain even though it is unlikely to cause injury.

## SKIN PROTECTION:

Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron, or full-body suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse.

## SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Store indoors at 50-95°F in original, unopened containers. Protect from atmospheric moisture. Replace outage with inert dry gas-nitrogen.

SECTION IX - ENVIRONMENTAL AND DISPOSAL INFORMATION

## ACTION TO TAKE FOR SPILLS AND LEAKS:

Evacuate and ventilate spill area. Dike spill to prevent entry into water system. Wear full protective equipment including positive pressure self-contained breathing apparatus.

## MAJOR SPILL:

If transportation spill involved call CHEMTREC (800) 424-9300. If temporary control of isocyanate vapor is required a blanket of protein foam (available at most fire departments) may be placed over the spill. Large quantities may be pumped into closed but not sealed containers for disposal.

## MINOR SPILLS:

Absorb the isocyanate with sawdust or other absorbent, shovel into suitable unsealed containers, transport to well-ventilated area (outside) and treat with neutralizing solution consisting of a mixture of water and 3 - 8% concentrated ammonium hydroxide (or 5 - 10% sodium carbonate). Add about 10 parts of neutralizer per part of isocyanate with mixing. Allow to stand for 48 hours letting evolved CO<sub>2</sub> escape.

## CLEAN UP:

Decontaminate floor using water/ammonia solution with 1 - 2% added detergent letting stand over affected area for at least 10 minutes. Cover mops and brooms used for this with plastic and dispose properly (often by incineration).

**DISPOSAL METHOD:**

Follow all federal, state, and local regulations. Liquids are usually incinerated in a proper facility. Solids are usually also incinerated or landfilled. Empty drums should be filled with water. Let stand for at least 48 hours. Drums should be drained, triple rinsed, and holed or crushed to prevent reuse. Dispose of drain and rinse fluid according to federal, state, and local regulations.

The drain and rinse fluid used for decontamination must be disposed of according to federal, state, and local law and regulations. The most commonly accepted method is in an approved wastewater treatment facility.

Plastic or steel drum disposal should be in accordance with federal, state, and local laws and regulations. Commonly accepted disposal methods of plastic drums after shredding are to send to an approved landfill or to incinerate in an appropriate incinerator facility. Steel drums are commonly crushed for disposal and sent to an approved landfill.

**REGULATORY INFORMATION: (Not meant to be all-inclusive--selected regulations represented.)****U.S. REGULATIONS**

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

<u>CHEMICAL NAME</u>	<u>CASE NUMBER</u>	<u>CONCENTRATION</u>
METHYLENE BIS (PHENYLISOCYANATE) (MBI)	000101-68-8	63 - 76 %

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard

A delayed health hazard

A reactive hazard

**CANADIAN REGULATIONS**

The Workplace Hazardous Materials Information System (W.H.M.I.S.) classification for this product is:

FLAMMABILITY : 1

HEALTH : 2

REACTIVITY : 2

The Transportation of Dangerous Goods Act (T.D.G.A.) classification for 55 gallon drums of this product is:  
Diphenylmethane-4,4'-Diisocyanate/class 6.1/UN2489/III

On containers under 55 gallons, the classification is:  
Diphenylmethane diisocyanate (MDI)

DISCLAIMER OF LIABILITY

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim liability for any use of this material. Information contained herein is believed to be true and accurate but all statements are made without warranty, express or implied, regarding the accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use and the suitability of the material for the user's purpose.

Prepared By: Joe Morales

F#170-21A

# HASTINGS PLASTICS COMPANY

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MATERIAL SAFETY  
DATA SHEET  
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## HAFLEX 1950-1A RESIN

### SECTION I - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME - HASTINGS PLASTICS COMPANY  
EMERGENCY PHONE NUMBER - (310) 829-3449  
PRODUCT NAME - Haflex 1950-1A Resin  
CHEMICAL FAMILY - Poly (oxyalkylene) Polyol  
CHEMICAL NAME AND  
SYNONYMS - Hydroxyl-Terminated Polyether Polyol

### SECTION II - HAZARDOUS INGREDIENTS

<u>COMPONENTS</u>	<u>CAS NUMBER</u>	<u>%</u>	<u>TLV-TWA</u>	<u>OSHA-PEL</u>
**Polyether Polyol	9082-002	50-60	N/A	N/A
Silica-SiO <sub>2</sub>	14808-60-7	30-37	N/A	N/A
Sodium Oxide	1313-59-3	.11	N/A	N/A
Silicon Oxide	7631-86-9	.37	10 mg/m <sup>3</sup>	6 m g / m <sup>3</sup>
Calcium Oxide	1305-78-8	.14	2 mg/m <sup>3</sup>	5 m g / m <sup>3</sup>
Aluminum Oxide	1344-28-1	.30	10 mg/m <sup>3</sup>	1 0 m g / m <sup>3</sup>
Phenylmercury	27236-65-3	.06	.1 mg/m <sup>3</sup>	. 1 m g / m <sup>3</sup>
Roleum Distillates	8030-30-6	.24	300 PPM	100 PPM

\*\* THIS PRODUCT CONTAINS NO HAZARDOUS INGREDIENTS AS DEFINED UNDER THE CRITERIA OF THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200.

### SECTION III - PHYSICAL DATA

APPEARANCE - Red colored liquid.  
ODOR - Slight  
SPECIFIC GRAVITY  
(H<sub>2</sub>O = 1) - 1.30 @ 77° F (25 C)  
SOLUBILITY IN WATER - Complete  
PERCENT VOLATILE - Negligible.

### SECTION IV - FIRE AND HAZARD EXPLOSION DATA

FLASH POINT <sup>D</sup>  
(Method Used) - 385°F or 193.3 C (Pensky-Marten C.C.).  
EXTINGUISHING MEDIA - Water; Carbon Dioxide; Dry Chemical; Foam

**SPECIAL FIRE FIGHTING PROCEDURE:**

Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire-fighter. Use cold water spray to cool fire-exposed containers to minimize risk of rupture. Material supports combustion. During a fire, irritating and toxic gases such as carbon monoxide may be generated by thermal decomposition or combustion. Do not spray fire directly. A solid stream of water directed into the hot burning liquid could cause frothing.

**SECTION V - HEALTH EFFECTS DATA**

ROUTE(S) OF ENTRY - Skin; Eye

**HEALTH EFFECTS AND SYMPTOMS OF OVEREXPOSURE:**

- ACUTE INHALATION - Materials are low in volatility and therefore not likely to pose a problem from inhalation.
- ACUTE EYE EFFECTS - May cause minor irritation but no corneal injury.
- ACUTE SKIN EFFECTS - Not likely to be absorbed in toxic amounts. However skin contact is to be avoided.
- ACUTE INGESTION - None reported, not a likely route of entry.
- CHRONIC EFFECTS OF EXPOSURE - Upon repeated contact, slight skin irritation is possible.
- CARCINOGENICITY - This product is not listed by NTP, IRAC or regulated as a carcinogen by OSHA.
- MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE - None reported

**SECTION VI - EMERGENCY & FIRST AID PROCEDURES**

- EYE CONTACT - Flush with large amounts of water for at least 15 minutes and consult an eye physician if ill effects occur.
- SKIN CONTACT - Remove all contaminated clothing and shoes. Wash skin thoroughly with soap and water. Wash shoes before wearing again.
- INHALATION - Remove to fresh air if breathing becomes difficult. Consult a physician administer oxygen if necessary.
- INGESTION OF FLUID - Not likely to be a problem, but if ingested, consult a physician.

**SECTION VII - EMPLOYEE PROTECTION RECOMMENDATIONS**

- EYE PROTECTION - Goggles or safety glasses.
- SKIN PROTECTION - Chemically resistant gloves recommended.
- RESPIRATORY PROTECTION - None required.
- VENTILATION - None required during handling but necessary during processing.
- OTHER - Safety showers and eye wash stations should be easily accessible to work area.

(Next Page)

**SECTION VIII - REACTIVITY DATA**

- STABILITY - This is a stable material
- HAZARDOUS POLYMERIZATION - Will not occur.
- INCOMPATIBILITIES - Oxidizing materials, isocyanates, and acids.
- INSTABILITY CONDITIONS - Not Noted
- HAZARDOUS DECOMPOSITION - By fire: CO<sub>2</sub>, CO, and other aliphatic fragments which have not been determined.

**SECTION IX - SPILL OR LEAK PROCEDURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:**

Cover spill with absorbent material, such as sand, sweeping compound, or diatomaceous earth. Collect material for disposal. Wash spill area with hot water.

**WASTE DISPOSAL METHOD:**

Waste may be incinerated or disposed of in compliance with local, state, and federal environmental control regulations.

**SECTION X - SPECIAL PRECAUTIONS & STORAGE DATA****STORAGE TEMPERATURE**

- (Min./Max.) - 60°F (15°C)/120°F (49°C)
- SPECIAL SENSITIVITY - Material is hygroscopic and may absorb small amounts of atmospheric moisture.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:**

Containers should be tightly closed to prevent contamination with foreign materials and moisture. Materials not considered hazardous under normal handling operations, but reasonable care should be exercised. Avoid skin and eye contact. Avoid breathing vapors if generated. If contamination with isocyanates is suspected, do not reseal containers. Employee education and training in safe handling of this product are recommended.

**SECTION XI - SHIPPING DATA**

- TECHNICAL SHIPPING NAME - Poly (oxyalkylene) polyol.
- D.O.T. HAZARD CLASS - Non-regulated.
- FREIGHT CLASS BULK - Polypropylene glycol.
- FREIGHT CLASS PACKAGING - Polypropylene glycol.

**SECTION XII - ANIMAL TOXICITY DATA**

No toxicity data has been established for this product.

(Over)

**SECTION XIII - FEDERAL REGULATORY INFORMATION**

**OSHA STATUS:** This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 DFR 1910.1200.

**CERLA REPORTABLE QUANTITY:** None Reported

**SARA TITLE III:**

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: None

SECTION 311/312 HAZARD CATEGORIES: None

**RCRA STATUS:** If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, It is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

**OTHER REGULATORY INFORMATION****CALIFORNIA PROPOSITION 65**

To the best of our knowledge, this product contains no levels of listed substances, which the state of California has found to cause cancer, birth defects or other reproductive effects.

**MASSACHUSETTS SUBSTANCE LIST (MSL)**

Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products. To the best of our knowledge, this product contains no substances at a level which could require reporting under the statute.

**DISCLAIMER OF LIABILITY**

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim liability for any use of this material. Information contained herein is believed to be true and accurate but all statements are made without warranty, express or implied, regarding the accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use and the suitability of the material for the user's purpose.

Prepared By: Joe Morales

F#170-21A

# HASTINGS PLASTICS COMPANY

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## HAFLEX 1950-1B HARDENER

### SECTION I - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME - HASTINGS PLASTICS COMPANY  
PRODUCT INFO/SALES - (310) 829-3449  
EMERGENCY PHONE NUMBER - 24 HOURS (800) 424-9300  
PRODUCT NAME - Haflex 1950-1A Hardener  
PRODUCT CODE NUMBER - 1950-1A Hardener  
CHEMICAL FAMILY - Aromatic Isocyanate  
CHEMICAL NAME - Diphenylmethane Diisocyanate (MDI) or  
SYNONYMS - Methylene Diphenyl Diisocyanate

### SECTION II - HAZARDOUS INGREDIENTS

<u>COMPONENTS</u>	<u>CAS #</u>	<u>%</u>
DIPHENYLMETHANE DIISOCYANATE (MDI) Containing Methylene bisphenyl isocyanate, CAS# 000101-68-8 (See regulatory Information Page)	026447-40-5	70 - 80
DIPHENYLMETHANE DIISOCYANATE (HOMOPOLYMER)	039310-05-9	20 - 30
TRIETHYL PHOSPHATE	000078-40-0	< 2%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not "Hazardous" per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

### SECTION III - PHYSICAL DATA

APPEARANCE - Light yellow liquid.  
BOILING POINT - 597°F (decomposes).  
VAPOR PRESSURE - 0.0003 mm hg @ 25°C.  
VAPOR DENSITY - Not determined.  
SPECIFIC GRAVITY - 1.2  
SOLUBILITY IN WATER - Reacts.  
VOC CONTENT (Gms/Lit) - N/A

### SECTION IV - FIRE AND HAZARD EXPLOSION DATA

FLASH POINT °F  
(Method Used) - >350°F, 177°C (PMCC).  
FLAMMABLE LIMITS - LEL: Not determined.  
UEL: Not determined.

**EXTINGUISHING MEDIA:**

Carbon Dioxide, dry chemical, or foam. For Large scale fires, alcohol resistant foams are preferred if available. General Purpose synthetic foams or protein foams may function, but much less effectively. Water may

be used as a blanket for fire extinguishment. If water is used, it should be used in very large quantity. The reaction between water and isocyanate may be vigorous. If possible, contain fire run off water.

**SPECIAL FIRE FIGHTING PROCEDURES:**

People who are fighting isocyanate fires must be protected against nitrogen oxide fumes and isocyanate vapors by wearing positive pressure self-contained breathing apparatus and full protective clothing.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Down-wind personnel must be evacuated. Do not reseal contaminated containers as pressure buildup may rupture them. A chemical reaction generating CO<sub>2</sub> gas pressure may occur resulting in rupture of the container. Dense smoke emitted when burned without sufficient oxygen. When using water spray, boil over may occur when the product temperature reaches the boiling point of water and the reaction forming CO<sub>2</sub> will accelerate (tank type scenarios, not spills).

**SECTION V - REACTIVITY DATA**

STABILITY - Stable under recommended storage conditions.

**HAZARDOUS POLYMERIZATION:**

May occur with incompatible reactants especially strong bases (alkalies, tertiaryamines, metal salts), water, or temperature over 160°C (320°C). Temperatures over 49°C (120°F) accelerate the reaction with water.

**INCOMPATIBILITY:**

Water, acid, base (alkalies, ammonia), alcohols, metal compounds, surface active materials. Avoid water as it reacts to form heat, CO<sub>2</sub>, and insoluble urea. The combined effect of the CO<sub>2</sub> and heat can produce enough pressure to rupture a closed container. The reaction with water is slow at temperatures less than 49°C (120°F), but accelerated at higher temperatures and in the presence of the above mentioned materials. Some reactions are violent.

**HAZARDOUS DECOMPOSITION:**

Isocyanate vapor and mist, carbon dioxide, carbon monoxide, nitrogen oxides, and traces of hydrogen cyanide.

**SECTION VI - HEALTH HAZARD DATA****EYE EFFECTS:**

May cause slight eye irritation. Corneal injury is unlikely.

**SKIN EFFECTS:**

Prolonged or repeated exposure may cause skin irritation. May stain skin. Skin contact may result in allergic skin reactions or respiratory sensitization but is not expected to result in absorption of amounts sufficient to cause other adverse effects.

**SKIN ABSORPTION:**

The LD50 for skin absorption in rabbits is > 2000mg/kg.

**INGESTION:**

Single dose oral toxicity is low. The oral LD50 for male rats is >5,000mg/kg. No hazards anticipated from ingestion incidental to industrial exposure.

**INHALATION:**

At room temperature, vapors are minimal due to low vapor pressure. However, certain operations may generate or aerosol concentrations sufficient to cause irritation or other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venation or pumping. Excessive exposure may cause irritation of the eyes, upper respiratory tract, and lungs. May cause respiratory sensitization in susceptible individuals. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Symptoms may include coughing, difficulty in breathing, and a feeling of tightness in the chest. Effects may be delayed. Impaired lung function (decreased ventilatory capacity) has been associated with overexposure to isocyanates.

**SYSTEMIC AND OTHER EFFECTS:**

Lung injury has been observed in laboratory animals after repeated excessive exposure to MDI/ polymeric MDI aerosol droplets.

**CANCER INFORMATION:**

Lung tumors have been observed in laboratory animals exposed to aerosol droplets of MDI/Polymeric MDI (6 mg/m<sup>3</sup>) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects.

**MUTAGENICITY (EFFECTS ON GENETIC MATERIAL):** Mutagenicity data on MDI are inconclusive. MDI was weakly positive in some vitro (test tube) studies; other in vitro studies were negative. A mutagenicity study in animals was negative.

**SECTION VII - EMERGENCY AND FIRST AID PROCEDURES**

- |                    |   |
|--------------------|---|
| INHALATION         | - Remove to fresh air. If not breathing, give mouth-to-mouth resuscitation. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.                           |
| EYE CONTACT        | - Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel. Materials containing MDI may react with the moisture of the eye forming a thick material which may be difficult to wash from the eye. |
| SKIN CONTACT       | - Wash off in flowing water or shower.  |
| INGESTION OF FLUID | - No adverse effects anticipated by this route of exposure incidental to proper industrial handling.  |

**NOTE TO PHYSICIAN:**

No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient. The manifestations of respiratory symptoms, including pulmonary edema, resulting from acute exposure may be delayed. May cause respiratory sensitization.

**SECTION VIII - HANDLING PRECAUTIONS****EXPOSURE GUIDELINE(S):**

ACGIH/TLV is 0.005 ppm TWA and OSHA/PEL is 0.02 ppm ceiling for methylene biphenyl isocyanate (MDI).

**VENTILATION:**

Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

**RESPIRATORY PROTECTION:**

Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. If vapor exposure causes eye discomfort, use a full-face respirator.

**EYE PROTECTION:**

Use safety glasses. Where contact with this material is likely, chemical goggles are recommended, because eye contact may cause pain even though it is unlikely to cause injury.

**SKIN PROTECTION:**

Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron, or full-body suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse.

**SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:**

Store indoors at 50-95°F in original, unopened containers. Protect from atmospheric moisture. Replace outage with inert dry gas-nitrogen.

**SECTION IX - ENVIRONMENTAL AND DISPOSAL INFORMATION****ACTION TO TAKE FOR SPILLS AND LEAKS:**

Evacuate and ventilate spill area. Dike spill to prevent entry into water system. Wear full protective equipment including positive pressure self-contained breathing apparatus.

**MAJOR SPILL:**

If transportation spill involved call CHEMTREC (800) 424-9300. If temporary control of isocyanate vapor is required a blanket of protein foam (available at most fire departments) may be placed over the spill. Large quantities may be pumped into closed but not sealed containers for disposal.

**MINOR SPILLS:**

Absorb the isocyanate with sawdust or other absorbent, shovel into suitable unsealed containers, transport to well-ventilated area (outside) and treat with neutralizing solution consisting of a mixture of water and 3 - 8% concentrated ammonium hydroxide (or 5 - 10% sodium carbonate). Add about 10 parts of neutralizer per part of isocyanate with mixing. Allow to stand for 48 hours letting evolved CO<sub>2</sub> escape.

**CLEAN UP:**

Decontaminate floor using water/ammonia solution with 1 - 2% added detergent letting stand over affected area for at least 10 minutes. Cover mops and brooms used for this with plastic and dispose properly (often by incineration).

**DISPOSAL METHOD:**

Follow all federal, state, and local regulations. Liquids are usually incinerated in a proper facility. Solids are usually also incinerated or landfilled. Empty drums should be filled with water. Let stand for at least 48 hours. Drums should be drained, triple rinsed, and holed or crushed to prevent reuse. Dispose of drain and rinse fluid according to federal, state, and local regulations.

The drain and rinse fluid used for decontamination must be disposed of according to federal, state, and local law and regulations. The most commonly accepted method is in an approved wastewater treatment facility.

Plastic or steel drum disposal should be in accordance with federal, state, and local laws and regulations. Commonly accepted disposal methods of plastic drums after shredding are to send to an approved landfill or to incinerate in an appropriate incinerator facility. Steel drums are commonly crushed for disposal and sent to an approved landfill.

**REGULATORY INFORMATION: (Not meant to be all-inclusive--selected regulations represented.)****U.S. REGULATIONS**

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

<u>CHEMICAL NAME</u>	<u>CASE NUMBER</u>	<u>CONCENTRATION</u>
METHYLENE BIS (PHENYLISOCYANATE) (MBI)	000101-68-8	63 - 76 %

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard  
A delayed health hazard  
A reactive hazard

**CANADIAN REGULATIONS**

The Workplace Hazardous Materials Information System (W.H.M.I.S.) classification for this product is:

FLAMMABILITY : 1  
HEALTH : 2  
REACTIVITY : 2

The Transportation of Dangerous Goods Act (T.D.G.A.) classification for 55 gallon drums of this product is:

Diphenylmethane-4,4'-Diisocyanate/class 6.1/UN2489/III

On containers under 55 gallons, the classification is:

Diphenylmethane diisocyanate (MDI)

DISCLAIMER OF LIABILITY

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim liability for any use of this material. Information contained herein is believed to be true and accurate but all statements are made without warranty, express or implied, regarding the accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use and the suitability of the material for the user's purpose.

Prepared By: Joe Morales

F#170-21A

# HASTINGS PLASTICS COMPANY

1704 Colorado Ave. Santa Monica, CA 90404 310-829-3449 FAX 310-828-6820

MATERIAL SAFETY  
DATA SHEET  
MSDS 1950-1B R  
Revised 10/15/92  
Replaces 09/07/88

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## HAFLEX 1950-1B RESIN

### SECTION I - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME - HASTINGS PLASTICS COMPANY  
PRODUCT INFORMATION AND SALES - (310) 829-3449  
EMERGENCY PHONE NUMBER - (800) 424-9300  
PRODUCT NAME - Haflex 1950-1B Resin  
CHEMICAL FAMILY - Poly (oxyalkylene) Polyol  
CHEMICAL NAME AND SYNONYMS - Hydroxyl, Terminated Polyether Polyol

### SECTION II - HAZARDOUS INGREDIENTS

<u>COMPONENTS</u>	<u>CAS NUMBER</u>	<u>%</u>	<u>TLV-TWA</u>	<u>OSHA-PEL</u>
**Polyether Polyol	9082-002	50-60	N/A	N/A
Silica-SiO <sub>2</sub>	14808-60-7	30-37	N/A	N/A
Sodium Oxide	1313-59-3	.11	N/A	N/A
Silicon Oxide	7631-86-9	.37	10 mg/m <sup>3</sup>	6 mg/m <sup>3</sup>
Calcium Oxide	1305-78-8	.14	2 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Aluminum Oxide	1344-28-1	.30	10 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>
Phenylmercury	27236-65-3	.06	.1 mg/m <sup>3</sup>	.1 mg/m <sup>3</sup>
Roleum Distillates	8030-30-6	.24	300 PPM	100 PPM

**\*\*THIS PRODUCT CONTAINS NO HAZARDOUS INGREDIENTS AS DEFINED UNDER THE CRITERIA OF THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200.**

### SECTION III - PHYSICAL DATA

APPEARANCE - Neutral colored liquid.  
ODOR - Slight  
SPECIFIC GRAVITY  
(H<sub>2</sub>O = 1) - 1.30 @ 77° F (25 C)  
SOLUBILITY IN WATER - Complete  
PERCENT VOLATILE - Negligible.

### SECTION IV - FIRE AND HAZARD EXPLOSION DATA

FLASH POINT <sup>D</sup>  
(Method Used) - 385°F or 193.3 C (Pensky-Marten C.C.).  
EXTINGUISHING MEDIA - Water; Carbon Dioxide; Dry Chemical; Foam

**SPECIAL FIRE FIGHTING PROCEDURE:**

Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire-fighter. Use cold water spray to cool fire-exposed containers to minimize risk of rupture. Material supports combustion. During a fire, irritating and toxic gases such as carbon monoxide may be generated by thermal decomposition or combustion. Do not spray fire directly. A solid stream of water directed into the hot burning liquid could cause frothing.

**SECTION V - HEALTH EFFECTS DATA**

ROUTE(S) OF ENTRY - Skin; Eye

**HEALTH EFFECTS AND SYMPTOMS OF OVEREXPOSURE:**

- ACUTE INHALATION - Materials are low in volatility and therefore not likely to pose a problem from inhalation.
- ACUTE EYE EFFECTS - May cause minor irritation but no corneal injury.
- ACUTE SKIN EFFECTS - Not likely to be absorbed in toxic amounts. However skin contact is to be avoided.
- ACUTE INGESTION - None reported, not a likely route of entry.
- CHRONIC EFFECTS OF EXPOSURE - Upon repeated contact, slight skin irritation is possible.
- CARCINOGENICITY - This product is not listed by NTP, IRAC or regulated as a carcinogen by OSHA.
- MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE -None reported

**SECTION VI - EMERGENCY & FIRST AID PROCEDURES**

- EYE CONTACT - Flush with large amounts of water for at least 15 minutes and consult an eye physician if ill effects occur.
- SKIN CONTACT - Remove all contaminated clothing and shoes. Wash skin thoroughly with soap and water. Wash shoes before wearing again.
- INHALATION - Remove to fresh air if breathing becomes difficult. Consult a physician administer oxygen if necessary.
- INGESTION OF FLUID - Not likely to be a problem, but if ingested, consult a physician.

**SECTION VII - EMPLOYEE PROTECTION RECOMMENDATIONS**

- EYE PROTECTION - Goggles or safety glasses.
- SKIN PROTECTION - Chemically resistant gloves recommended.
- RESPIRATORY PROTECTION - None required.
- VENTILATION - None required during handling but necessary during processing.
- OTHER - Safety showers and eye wash stations should be easily accessible to work area.

**SECTION VIII - REACTIVITY DATA**

STABILITY	- This is a stable material
HAZARDOUS POLYMERIZATION	- Will not occur.
INCOMPATIBILITIES	- Oxidizing materials, isocyanates, and acids.
INSTABILITY CONDITIONS	- Not Noted
HAZARDOUS DECOMPOSITION	- By fire: CO <sub>2</sub> , CO, and other aliphatic fragments which have not been determined.

**SECTION IX - SPILL OR LEAK PROCEDURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:**

Cover spill with absorbent material, such as sand, sweeping compound, or diatomaceous earth. Collect material for disposal. Wash spill area with hot water.

**WASTE DISPOSAL METHOD:**

Waste may be incinerated or disposed of in compliance with local, state, and federal environmental control regulations.

**SECTION X - SPECIAL PRECAUTIONS & STORAGE DATA****STORAGE TEMPERATURE**

(Min./Max.).	- 60°F (15°C)/120°F (49°C)
SPECIAL SENSITIVITY	- Material is hygroscopic and may absorb small amounts of atmospheric moisture.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:**

Containers should be tightly closed to prevent contamination with foreign materials and moisture. Materials not considered hazardous under normal handling operations, but reasonable care should be exercised. Avoid skin and eye contact. Avoid breathing vapors if generated. If contamination with isocyanates is suspected, do not reseal containers. Employee education and training in safe handling of this product are recommended.

**SECTION XI - SHIPPING DATA**

TECHNICAL SHIPPING NAME	- Poly (oxyalkylene) polyol.
D.O.T. HAZARD CLASS	- Non-regulated.
FREIGHT CLASS BULK	- Polypropylene glycol.
FREIGHT CLASS PACKAGING	- Polypropylene glycol.

**SECTION XII - ANIMAL TOXICITY DATA**

No toxicity data has been established for this product.

**SECTION XIII - FEDERAL REGULATORY INFORMATION**

**OSHA STATUS:** This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 DFR 1910.1200.

**CERLA REPORTABLE QUANTITY:** None Reported

**SARA TITLE III:**

SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: None

SECTION 311/312 HAZARD CATEGORIES: None

**RCRA STATUS:** If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, It is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

OTHER REGULATORY INFORMATION

CALIFORNIA PROPOSITION 65

To the best of our knowledge, this product contains no levels of listed substances, which the state of California has found to cause cancer, birth defects or other reproductive effects.

MASSACHUSETTS SUBSTANCE LIST (MSL)

Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products. To the best of our knowledge, this product contains no substances at a level which could require reporting under the statute.

DISCLAIMER OF LIABILITY

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim liability for any use of this material. Information contained herein is believed to be true and accurate but all statements are made without warranty, express or implied, regarding the accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use and the suitability of the material for the user's purpose.

Prepared By: Joe Morales

F#170-21A

# HASTINGS PLASTICS COMPANY

1704 Colorado Ave. Santa Monica, CA 90404 310-829-3449 FAX 310-828-6820

MATERIAL SAFETY  
DATA SHEET  
MSDS 1951-35  
\*Revised 05/19/92  
Issued 09/07/88

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## HAFLEX 1951-35

### SECTION I - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME - HASTINGS PLASTICS COMPANY  
EMERGENCY PHONE NUMBER - (310) 829-3449  
CHEMICAL NAME & SYNONYMS - Vinyl Ester  
TRADE NAME - Haflex 1951-35

### SECTION II - HAZARDOUS INGREDIENTS

<u>COMPONENTS</u>	<u>CAS #</u>	<u>%</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>
DI(2-ETHYHEXYL) PHTHALATE Identified as a CARCINOGEN by NTP, IARC	117-81-7	60 - 70	5 MG/M3	5 MG/M3
P.V.C. POLYVINYL CHLORIDE	9002-86-2	35 - 45	0.5 ppm	0.5 ppm

HEALTH - 2      FLAMMABILITY - 1      REACTIVITY - 0  
HMIS<sup>2</sup>

Health Hazard	0
Flammability	1
Reactivity	0
Max Personal Protection	*

NOTE: OSHA/ACGIH SHORT TERM EXPOSURE LIMIT (STEL) FOR DI-SEC-OCTYL PHTHALATE DI(2-ETHYLHIXYL) PHTHALATE IS 10 MG/CUM. NOISH RECOMMENDS THAT OCCUPATIONAL EXPOSURE BE REDUCED TO THE LOWEST FEASIBLE LEVEL.

Vinyl resin contains a very small amount of residual vinyl chloride monomer (CAS Registry Number: 75-01-4).

SPECIAL NOTE: Polyvinyl chloride resin is not a cancer suspect agent. It is the trace amount of unreacted vinyl chloride monomer that must be controlled, not the vinyl itself.

THIS CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SATA TITLE III.

### SECTION III - PHYSICAL DATA

APPEARANCE, COLOR,  
AND ODOR - Clear liquid.

BOILING POINT (°F)	-	600°F.
VAPOR PRESSURE (mm Hg)	-	1.20 @ 200°F DEG
VAPOR DENSITY	-	Heavier than air.
SPECIFIC GRAVITY	-	1.14
SOLUBILITY IN WATER	-	Negligible.
PERCENT VOLATILE (By Volume %)	-	UNAVAILABLE
EVAPORATION RATE	-	SLOWER THAN ETHER

#### SECTION IV - FIRE AND HAZARD EXPLOSION DATA.

FLASH POINT, °F	-	Above 250°F.
EXTINGUISHING MEDIA	-	ABC dry powder, protein type air foams.
SPECIAL FIRE FIGHTING PROCEDURES	-	Wear self-contained breathing apparatus to prevent inhalation of combustion gases.
UNUSUAL FIRE AND EXPLOSION HAZARDS	-	Vinyl resin is not considered to be a dust explosion risk.
FLAMMABLE LIMITS	-	N/A.

#### COMBUSTION PRODUCTS:

When forced to burn, about 97% of the combustion gases from vinyl resin will be a combination of hydrogen chloride, carbon monoxide and carbon dioxide. Other gases will include small amounts of benzene and aromatic and aliphatic hydrocarbons.

#### SECTION V - HEALTH EFFECTS DATA

PERMISSIBLE EXPOSURE LEVEL	-	5 MG/M3
THRESHOLD LIMIT VALUE	-	5 MG/M3

#### EFFECTS OF OVEREXPOSURE:

EYES - May cause irritation.

SKIN - Can cause slight irritation.

BREATHING - Of mist can cause irritation of nasal and respiratory passages.

SWALLOWING - Can cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

#### SECTION VI-EMERGENCY AND FIRST AID PROCEDURES

IF ON SKIN: Thoroughly wash exposed area with soap and water. Remove contaminated clothing. Launder contaminated clothing before re-use.

IF IN EYES: Flush with large amounts of water, lifting upper and lower lids occasionally.

IF SWALLOWED: Give two glasses of water, induce vomiting immediately by sticking finger down throat. Call a physician. Never give anything by mouth to an unconscious person.

IF BREATHED: Remove individual to fresh air.

PRIMARY ROUTE(S) OF ENTRY: Inhalation, skin contact.

**EFFECTS OF CHRONIC OVEREXPOSURE:**

Both NTP and IARC have determined that there is sufficient evidence for the carcinogenicity of DI(2-ETHYLHEXYL) PHTHALATE in experimental animals. DEHP administered in the diet produced an increased incidence of hepatocellular carcinomas in female rats and male and female mice, and an increased incidence of hepatocellular carcinomas or neoplastic nodules in male rats. DEHP also causes fetotoxicity and teratogenicity in pregnant female rodents.

Overexposure to this material (or its components) has apparently been found to cause the following effects in laboratory animal: Testis damage.

**DUST EXPOSURE:**

Vinyl resin has little effect on the lungs and is not known to cause any disease when dust exposure is minimized.

**SECTION VII - SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION** - Not required under normal conditions of use.

If workplace limit(s) of product or any component is exceeded (see section V), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your safety equipment supplier). Engineering or administrative controls should be implemented to reduce exposure.

**VENTILATION** - Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(S).

**PROTECTIVE GLOVES** - Wear resistant gloves such as polyethylene or neoprene.

**EYE PROTECTION** - Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. (Consult your safety equipment supplier)

**NORMAL MELT PROCESSING:**

Virtually all thermoplastic materials will emit fumes and/or vapors when heated to processing temperatures. The concentration and composition of these vapors will depend upon variables such as the specific compound formulation and processing method and temperature. Always use vinyl compound under well-ventilated conditions and avoid continued or prolonged breathing of process vapors. For personal hygiene, wash thoroughly after handling resin, especially before eating, smoking or using toilet facilities. Do not store or consume food in processing areas. Do not use processing equipment to heat food.

**SPECIAL NOTE:**

Vinyl compound at or above normal processing temperature must never be allowed to accumulate in thick masses, or it will begin to thermally decompose and to swell due to internal gassing. Gassing may cause a thick mass to explode if its outside surface is hardened. Molten waste should be collected as strands or flattened to 2-inches or less, and quenched in a drum of cold water provided for this purpose. Decomposing material should be removed to a well-ventilated area, preferably outdoors.

**SECTION VIII -REACTIVITY DATA**

- STABILITY - Stable.
- INCOMPATIBILITY - Strong oxidizing agents.
- HAZARDOUS DECOMPOSITION PRODUCTS - Hydrogen chloride, carbon monoxide, carbon dioxide and small amounts of benzene and aromatic and aliphatic hydrocarbons.

- HAZARDOUS POLYMERIZATION -  
Will not occur.

**SECTION IX - SPILL OR LEAK PROCEDURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:**

- SMALL SPILL - Absorb liquid on paper, vermiculite, floor absorbent, or other absorbent material and transfer to hood.

**LARGE SPILLS:**

Eliminate all ignition sources (flares, flames, including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source. Dike area of spill to prevent spreading pump liquid to salvage tank. Remaining liquid may be taken up on sand clay, earth, floor absorbent, or other absorbent material and shovelled into containers.

**WASTE DISPOSAL METHOD:**

- SMALL SPILL - Package material in paper and deposit in landfill in accordance with local, state, and federal regulations.
- LARGE SPILLS - Destroy by liquid incineration.

**SECTION X - SPECIAL PRECAUTIONS****PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:**

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid) all hazard precautions given in this data sheet must be observed.

DISCLAIMER OF LIABILITY

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim liability for any use of this material. Information contained herein is believed to be true and accurate but all statements are made without warranty, express or implied, regarding the accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use and the suitability of the material for the user's purpose.

Prepared By: Joe Morales

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MATERIAL SAFETY  
DATA SHEET  
MSDS 1951-65  
\*Revised 05/19/92  
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## HAFLEX 1951-65

### SECTION I - PRODUCT IDENTIFICATION

MANUFACTURER'S NAME -HASTINGS PLASTICS COMPANY  
EMERGENCY PHONE NUMBER -(310) 829-3449  
CHEMICAL NAME & SYNONYMS -Vinyl Ester  
TRADE NAME -Haflex 1951-65

### SECTION II - HAZARDOUS INGREDIENTS

<u>COMPONENTS</u>	<u>CAS #</u>	<u>%</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>
DI(2-ETHYHEXYL) PHTHALATE Identified as a CARCINOGEN by NTP, IARC	117-81-7	45 - 55	5 MG/M3	5 MG/M3
P.V.C. POLYVINYL CHLORIDE	9002-86-2	46 - 50	0.5 ppm	0.5 ppm

HEALTH - 2      FLAMMABILITY - 1      REACTIVITY - 0  
HMIS<sup>2</sup>

Health Hazard	0
Flammability	1
Reactivity	0
Max Personal Protection	*

NOTE: OSHA/ACGIH SHORT TERM EXPOSURE LIMIT (STEL) FOR DI-SEC-OCTYL PHTHALATE DI(2-ETHYLHIXYL) PHTHALATE IS 10 MG/CUM. NOISH RECOMMENDS THAT OCCUPATIONAL EXPOSURE BE REDUCED TO THE LOWEST FEASIBLE LEVEL.

Vinyl resin contains a very small amount of residual vinyl chloride monomer (CAS Registry Number: 75-01-4).

SPECIAL NOTE: Polyvinyl chloride resin is not a cancer suspect agent. It is the trace amount of unreacted vinyl chloride monomer that must be controlled, not the vinyl itself.

THIS CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SATA TITLE III.

SECTION III - PHYSICAL DATA

APPEARANCE, COLOR, AND ODOR	- Clear liquid.
BOILING POINT (°F)	- 600°F.
VAPOR PRESSURE (mm Hg)	- 1.20 @ 200°F DEG
VAPOR DENSITY	- Heavier than air.
SPECIFIC GRAVITY	- 1.14
SOLUBILITY IN WATER	- Negligible.
PERCENT VOLATILE (By Volume %)	- UNAVAILABLE
EVAPORATION RATE	- SLOWER THAN ETHER

SECTION IV - FIRE AND HAZARD EXPLOSION DATA.

FLASH POINT, °F	- Above 250°F.
EXTINGUISHING MEDIA	- ABC dry powder, protein type air foams.
SPECIAL FIRE FIGHTING PROCEDURES	- Wear self-contained breathing apparatus to prevent inhalation of combustion gases.
UNUSUAL FIRE AND EXPLOSION HAZARDS	- Vinyl resin is not considered to be a dust explosion risk.
FLAMMABLE LIMITS	- N/A.

## COMBUSTION PRODUCTS:

When forced to burn, about 97% of the combustion gases from vinyl resin will be a combination of hydrogen chloride, carbon monoxide and carbon dioxide. Other gases will include small amounts of benzene and aromatic and aliphatic hydrocarbons.

SECTION V - HEALTH EFFECTS DATA

PERMISSIBLE EXPOSURE LEVEL	- 5 MG/M3
THRESHOLD LIMIT VALUE	- 5 MG/M3

## EFFECTS OF OVEREXPOSURE:

EYES - May cause irritation.

SKIN - Can cause slight irritation.

BREATHING - Of mist can cause irritation of nasal and respiratory passages.

SWALLOWING - Can cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

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PRIMARY ROUTE(S) OF ENTRY: Inhalation, skin contact.

#### EFFECTS OF CHRONIC OVEREXPOSURE:

Both NTP and IARC have determined that there is sufficient evidence for the carcinogenicity of DI(2-ETHYLHEXYL) PHTHALATE in experimental animals. DEHP administered in the diet produced an increased incidence of hepatocellular carcinomas in female rats and male and female mice, and an increased incidence of hepatocellular carcinomas or neoplastic nodules in male rats. DEHP also causes fetotoxicity and teratogenicity in pregnant female rodents.

Overexposure to this material (or its components) has apparently been found to cause the following effects in laboratory animal: Testis damage.

#### DUST EXPOSURE:

Vinyl resin has little effect on the lungs and is not known to cause any disease when dust exposure is minimized.

### SECTION VII - SPECIAL PROTECTION INFORMATION

**RESPIRATORY PROTECTION** - Not required under normal conditions of use.

If workplace limit(s) of product or any component is exceeded (see section V), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your safety equipment supplier). Engineering or administrative controls should be implemented to reduce exposure.

**VENTILATION** - Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(S).

**PROTECTIVE GLOVES** - Wear resistant gloves such as polyethylene or neoprene.

**EYE PROTECTION** - Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. (Consult your safety equipment supplier)

#### NORMAL MELT PROCESSING:

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**SPECIAL NOTE:**

Vinyl compound at or above normal processing temperature must never be allowed to accumulate in thick masses, or it will begin to thermally decompose and to swell due to internal gassing. Gassing may cause a thick mass to explode if its outside surface is hardened. Molten waste should be collected as strands or flattened to 2-inches or less, and quenched in a drum of cold water provided for this purpose. Decomposing material should be removed to a well-ventilated area, preferably outdoors.

**SECTION VIII -REACTIVITY DATA**

- STABILITY - Stable.
- INCOMPATIBILITY - Strong oxidizing agents.
- HAZARDOUS DECOMPOSITION PRODUCTS - Hydrogen chloride, carbon monoxide, carbon dioxide and small amounts of benzene and aromatic and aliphatic hydrocarbons.

- HAZARDOUS POLYMERIZATION -  
Will not occur.

**SECTION IX - SPILL OR LEAK PROCEDURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:**

- SMALL SPILL - Absorb liquid on paper, vermiculite, floor absorbent, or other absorbent material and transfer to hood.

**LARGE SPILLS:**

Eliminate all ignition sources (flares, flames, including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source. Dike area of spill to prevent spreading pump liquid to salvage tank. Remaining liquid may be taken up on sand clay, earth, floor absorbent, or other absorbent material and shovelled into containers.

**WASTE DISPOSAL METHOD:**

- SMALL SPILL - Package material in paper and deposit in landfill in accordance with local, state, and federal regulations.
- LARGE SPILLS - Destroy by liquid incineration.

**SECTION X - SPECIAL PRECAUTIONS****PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:**

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid) all hazard precautions given in this data sheet must be observed.

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Prepared By: Joe Morales

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