UNIROYAL CHEMICAL

Material Safety Data Sheet

Uniroyal Chemical Company, Inc.
World Headquarters
Middlebury, CT 06749

UNIROYAL Emergency Phone: (203) 723-3670
CHEMTREC Transportation Emergency Phone: 1-800-424-9300
SAFETY DATA Information (203) 573-3303

MSDS No. V766009 Date Issued: 10/25/85
Date Revised: 5/5/92; Supercedes: 12/9/91 B-3

IDENTIFICATION

Trade Name: VIBRATHANE® 6012 CAS Number: NA

Chemical Name: Reaction product of a polyester with diphenylmethane diisocyanate (MDI) Chemical Family: Polyurethane

SPECIAL REGULATORY HAZARDS

Ingredient	CAS No.	Exposure Limit	OSHA (1910.1200)	EEC*
MDI	101-68-8	0.02 ppm, ceiling (OSHA) 0.005 ppm, TWA (ACGIH)	Sensitizer	Sensitizer

Hazard assessment based on available data.

Transportation: NA

PHYSICAL DATA

Appearance and Odor: Viscous liquid; slight odor

Solubility: Reacts in water, soluble in THF, DMF, or methylene chloride

Melting Point: ND

Boiling Point: ND

Other Data: Solidification Point: 60°F (22°C)
Reactive Isocyanate (NCO): 2.4 - 9.3

Specific Gravity (H_2O = 1): 1.15 - 1.22

Vapor Pressure @ 20° C. ND

Vapor Density (Air = 1): ND

Volatility @ 70° F: Low

FIRE AND EXPLOSION HAZARD DATA

Flash Point: 400°F (204°C) CC Autoignition Temp: ND

Extinguishing Media: Water spray, dry chemical Flammable Limits: ND

Special Fire Fighting Procedures: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

Unusual Hazards: None identified.

REACTIVITY DATA

Stability: Stable at ambient temperatures and pressures.

Incompatibility: Avoid contamination with water, solvents and any foreign matter.

Decomposition Products: High temperatures will release cyanates and hydrocarbons. Oxides of carbon, nitrogen and small amount of HCN under burning conditions.

NA = Not Applicable ND = Not Determined *European Economic Community

SPECIAL PROTECTION INFORMATION

Engineering Controls: Local exhaust ventilation strongly recommended.

Personal Protection Equipment: Chemical resistant gloves and goggles should be worn. Avoid breathing vapors. In the absence of good ventilation, under emergency situations or for high concentrations, self-contained or air-supplied respiratory protection is recommended.

STORAGE, SPILLS AND DISPOSAL INFORMATION

Storage: Store away from sources of direct heat and moisture. Seal containers with a dry nitrogen blanket and keep closed when not in use. Moisture contamination will evolve CO_2 and create pressure in closed systems.

Spills: Absorb on inert carrier. Transfer to open containers outside or in well-ventilated area. Soak with dilute ammonia hydroxide or water alcohol mixture. Allow time for reaction to be complete before disposal.

Disposal: In a well ventilated area, fill drums with a couple of inches of water. Leave bung off and slowly shake and roll drum to allow water contact. Leave open to air for sufficient time to cure. Cured polyurethane is not a RCRA hazardous waste. Dispose of in accordance with local, state or federal regulations regarding polymeric waste. WARNING! Burning this material can produce toxic fumes.

Environmental Information: Environmental effects have not been determined.

HEALTH RELATED DATA

Specific Hazard(s): Contact with eyes and skin may cause irritation. Repeated, minimal contact with skin may cause sensitization. Exposure to vapor can cause irritation to eyes, lungs and mucous membranes. Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma. Individuals with respiratory problems should avoid exposure to this material.

Primary Route(s) of Entry: Inhalation, skin absorption.

First Aid Procedures: **Eye contact:** Flush with water for 15 minutes. Get medical attention.
Skin contact: Wipe excess. Wash with rubbing alcohol, if available, followed by soap and water. Discard shoes if contaminated.
Inhalation: Remove to fresh air. **Physician** - treat for potential respiratory irritation.

Toxicology Information:

Sensitization: Respiratory and dermal sensitizer based upon human experience (MDI)

Mutagenicity: Ames *Salmonella* - positive (MDI)

SARA TITLE III (40CFR 372)
SECTION 313 TOXIC CHEMICALS NOTIFICATION

TOXIC CHEMICAL	CAS #	% (BY WT.)
Diphenylmethane diisocyanate	101-68-8	9.36

Carcinogenic per NTP _____ IARC _____ OSHA _____ None ___X___

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MSDS No. V766020 Date Issued: 10/25/85
Date Revised: 5/5/92; Supercedes: 12/9/91 R-3

IDENTIFICATION

Trade Name: VIBRATHANE® 8007 CAS Number: NA

Chemical Name: Reaction product of a polyester with diphenylmethane diisocyanate (MDI) Chemical Family: Polyurethane

SPECIAL REGULATORY HAZARDS

Ingredient	CAS No.	Exposure Limit	OSHA (1910.1200)	EEC*
MDI	101-68-8	0.02 ppm, ceiling (OSHA) 0.005 ppm, TWA (ACGIH)	Sensitizer	Sensitizer

Hazard assessment based on available data.

Transportation: NA

PHYSICAL DATA

Appearance and Odor: Viscous liquid; slight odor

Solubility: Reacts in water, soluble in THF, DMF, or methylene chloride

Melting Point: ND

Boiling Point: ND

Other Data: Solidification Point: 60°F (22°C)
Reactive Isocyanate (NCO): 2.4 - 9.3

Specific Gravity (H_2O = 1): 1.15 - 1.22

Vapor Pressure @ 20° C. ND

Vapor Density (Air = 1): ND

Volatility @ 70° F: Low

FIRE AND EXPLOSION HAZARD DATA

Flash Point: 400°F (204°C) CC Autoignition Temp: ND

Extinguishing Media: Water spray, dry chemical Flammable Limits: ND

Special Fire Fighting Procedures: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

Unusual Hazards: None identified.

REACTIVITY DATA

Stability: Stable at ambient temperatures and pressures.

Incompatibility: Avoid contamination with water, solvents and any foreign matter.

Decomposition Products: High temperatures will release cyanates and hydrocarbons. Oxides of carbon, nitrogen and small amount of HCN under burning conditions.

NA = Not Applicable ND = Not Determined *European Economic Community

SPECIAL PROTECTION INFORMATION

Engineering Controls: Local exhaust ventilation strongly recommended.

Personal Protection Equipment: Chemical resistant gloves and goggles should be worn. Avoid breathing vapors. In the absence of good ventilation, under emergency situations or for high concentrations, self-contained or air-supplied respiratory protection is recommended.

STORAGE, SPILLS AND DISPOSAL INFORMATION

Storage: Store away from sources of direct heat and moisture. Seal containers with a dry nitrogen blanket and keep closed when not in use. Moisture contamination will evolve CO_2 and create pressure in closed systems.

Spills: Absorb on inert carrier. Transfer to open containers outside or in well-ventilated area. Soak with dilute ammonia hydroxide or water alcohol mixture. Allow time for reaction to be complete before disposal.

Disposal: In a well ventilated area, fill drums with a couple of inches of water. Leave bung off and slowly shake and roll drum to allow water contact. Leave open to air for sufficient time to cure. Cured polyurethane is not a RCRA hazardous waste. Dispose of in accordance with local, state or federal regulations regarding polymeric waste. WARNING! Burning this material can produce toxic fumes.

Environmental Information: Environmental effects have not been determined.

HEALTH RELATED DATA

Specific Hazard(s): Contact with eyes and skin may cause irritation. Repeated, minimal contact with skin may cause sensitization. Exposure to vapor can cause irritation to eyes, lungs and mucous membranes. Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma. Individuals with respiratory problems should avoid exposure to this material.

Primary Route(s) of Entry: Inhalation, skin absorption.

First Aid Procedures: **Eye contact:** Flush with water for 15 minutes. Get medical attention.

Skin contact: Wipe excess. Wash with rubbing alcohol, if available, followed by soap and water. Discard shoes if contaminated.

Inhalation: Remove to fresh air. **Physician** - treat for potential respiratory irritation.

Toxicology Information:

Sensitization: Respiratory and dermal sensitizer based upon human experience (MDI)

Mutagenicity: Ames *Salmonella* - positive (MDI)

SARA TITLE III (40CFR 372)
SECTION 313 TOXIC CHEMICALS NOTIFICATION

TOXIC CHEMICAL	CAS #	% (BY WT.)
Diphenylmethane diisocyanate	101-68-8	21.8

Carcinogenic per NTP _____ IARC _____ OSHA _____ None __X__ .

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MSDS No. V766046 Date Issued: 10/25/85

IDENTIFICATION

R-1

Trade Name: VIBRATHANE® 8090

CAS Number: NA

Chemical Name: Reaction product of a polyester with toluene diisocyanate (TDI)

Chemical Family: Polyurethane

SPECIAL REGULATORY HAZARDS

Ingredient	CAS No.	Exposure Limit	OSHA (1910.1200)	EEC*
TDI	584-84-9	.005 ppm (ACGIH)	Irritant Sensitizer Carcinogen (NTP)	Irritant Sensitizer Irreversible effects

Hazard assessment based on available data.

Transportation: NA

PHYSICAL DATA

Appearance and Odor: Viscous liquid to a white, waxy solid; slight odor

Solubility: Reacts in water, soluble in THF, DMF or methylene chloride

Melting Point: ND

Boiling Point: ND

Other Data: Solidification Point: < 90°F (22°C)
Reactive Isocyanate (NCO): 2.4 - 9.3

Specific Gravity (H_2O = 1): 1.15 - 1.22

Vapor Pressure @ 20°C. ND

Vapor Density (Air = 1): ND

Volatility @ 70°F: Low

FIRE AND EXPLOSION HAZARD DATA

Flash Point: > 400°F (204°C) CC

Autoignition Temp: ND

Extinguishing Media: Water spray, dry chemical

Flammable Limits: ND

Special Fire Fighting Procedures: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

Unusual Hazards: None identified.

REACTIVITY DATA

Stability: Stable at ambient temperatures and pressures.

Incompatibility: Avoid contamination with water, solvents and any foreign matter.

Decomposition Products: High temperatures will release cyanates and hydrocarbons. Oxides of carbon, nitrogen and small amount of HCN under burning conditions.

NA = Not Applicable ND = Not Determined *European Economic Community

SPECIAL PROTECTION INFORMATION

Engineering Controls: Local exhaust ventilation strongly recommended.

Personal Protection Equipment: Impervious gloves and goggles should be worn. Avoid breathing vapors. In the absence of good ventilation, under emergency situations or for high concentrations, self-contained or air-supplied respiratory protection is recommended.

STORAGE, SPILLS AND DISPOSAL INFORMATION

Storage: Store away from sources of direct heat and moisture. Seal containers with a dry nitrogen blanket and keep closed when not in use. Moisture contamination will evolve CO_2 and create pressure in closed systems.

Spills: Absorb on inert carrier. Transfer to open containers outside or in well-ventilated area. Soak with dilute ammonia hydroxide or water alcohol mixture. Allow time for reaction to be complete before disposal. Reportable Quantity - 100 lbs. (TDI)

Disposal: In accordance with any applicable local, state, or federal regulation regarding polymeric waste.

Environmental Information: Environmental effects have not been determined.

HEALTH RELATED DATA

Specific Hazard(s): Contact with eyes and skin may cause irritation. Repeated, minimal contact with skin may cause sensitization. Exposure to vapor can cause irritation to eyes, lungs and mucous membranes. Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma.

Primary Route(s) of Entry: Inhalation, skin absorption.

First Aid Procedures: **Eye contact:** Flush with water for 15 minutes. Get medical attention.
Skin contact: Wipe excess. Wash with rubbing alcohol, if available, followed by soap and water. Discard shoes if contaminated.
Inhalation: Remove to fresh air. **Physician** - treat for potential respiratory irritation.

Toxicology Information:
There is no acute toxicology data on this material, however, residual TDI (0.02 - 4.0%) does possess irritancy and sensitization potential.

Chronic: Oral gavage administration of TDI in corn oil to rats and mice for 2 years resulted in an increased incidence of tumors. Six hour daily inhalation exposures to rats and mice of 0.05 and 0.15 ppm TDI for 2 years did not produce tumors. Since inhalation is the usual route of human exposure, the carcinogenic potential of TDI to humans has not been established.

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MSDS No. V762003 Date Issued: 10/25/85
Date Revised: 5/5/92; Supercedes: 12/9/91 R-3

IDENTIFICATION

Trade Name: VIBRATHANE® B-602

CAS Number: NA

Chemical Name: Reaction product of a polyether with toluene diisocyanate (TDI)

Chemical Family: Polyurethane

SPECIAL REGULATORY HAZARDS

Ingredient	CAS No.	Exposure Limit	OSHA (1910.1200)	EEC*
TDI	584-84-9	.005 ppm, TWA 0.02 ppm, STEL (OSHA, ACGIH)	Irritant Sensitizer Carcinogen (NTP, IARC 2b)	Irritant Sensitizer Irreversible effects

Hazard assessment based on available data.

Transportation: NA

PHYSICAL DATA

Appearance and Odor: Viscous liquid; slight odor

Solubility: Reacts in water, soluble in THF, DMF, or methylene chloride

Melting Point: ND

Boiling Point: ND

Other Data: Solidification Point: <60°F (16°C)
Reactive Isocyanate (NCO): 2.8 - 12.45

Specific Gravity (H_2O = 1): 1.02 - 1.11

Vapor Pressure @ 20° C. ND

Vapor Density (Air = 1): ND

Volatility @ 70° F: Low

FIRE AND EXPLOSION HAZARD DATA

Flash Point: >400°F (204°C) CC

Autoignition Temp: ND

Extinquishing Media: Water spray, dry chemical

Flammable Limits: ND

Special Fire Fighting Procedures: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

Unusual Hazards: None identified.

REACTIVITY DATA

Stability: Stable at ambient temperatures and pressures.

Incompatibility: Avoid contamination with water, solvents and any foreign matter.

Decomposition Products: High temperatures will release cyanates and hydrocarbons. Oxides of carbon, nitrogen and small amount of HCN under burning conditions.

NA = Not Applicable ND = Not Determined *European Economic Community

SPECIAL PROTECTION INFORMATION

Engineering Controls: Local exhaust ventilation strongly recommended.

Personal Protection Equipment: Chemical resistant gloves and goggles should be worn. Avoid breathing vapors. In the absence of good ventilation, under emergency situations or for high concentrations, self-contained or air-supplied respiratory protection is recommended.

STORAGE, SPILLS AND DISPOSAL INFORMATION

Storage: Store away from sources of direct heat and moisture. Seal containers with a dry nitrogen blanket and keep closed when not in use. Moisture contamination will evolve CO_2 and create pressure in closed systems.

Spills: Absorb on inert carrier. Transfer to open containers outside or in well-ventilated area. Soak with dilute ammonia hydroxide or water alcohol mixture. Allow time for reaction to be complete before disposal.
Reportable Quantity - 100 lbs. (TDI)

Disposal: In accordance with any applicable local, state or federal regulation regarding polymeric waste.

Environmental Information: Environmental effects have not been determined.

HEALTH RELATED DATA

Specific Hazard(s): Contact with eyes and skin may cause irritation. Repeated, minimal contact with skin may cause sensitization. Exposure to vapor can cause irritation to eyes, lungs and mucous membranes. Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma.

Primary Route(s) of Entry: Inhalation, skin absorption.

First Aid Procedures: **Eye contact:** Flush with water for 15 minutes. Get medical attention.
Skin contact: Wipe excess. Wash with rubbing alcohol, if available, followed by soap and water. Discard shoes if contaminated.
Inhalation: Remove to fresh air. **Physician** - treat for potential respiratory irritation.

Toxicology Information:

There are no acute toxicology data on this material, however, residual TDI (0.02 - 4.0%) does possess irritancy and sensitization potential.
Chronic: Oral gavage administration of TDI in corn oil to rats and mice for 2 years resulted in an increased incidence of tumors. Six hour daily inhalation exposures to rats and mice of 0.05 and 0.15 ppm TDI for 2 years did not produce tumors. Since inhalation is the usual route of human exposure, the carcinogenic potential of TDI to humans has not been established.

SARA TITLE III (40CFR 372)
SECTION 313 TOXIC CHEMICALS NOTIFICATION

TOXIC CHEMICAL	CAS #	% (BY WT.)
2,4-toluene diisocyanate	584-84-9	0.83
2,6-toluene diisocyanate	91-08-7	0.10

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Carcinogenic per NTP X IARC 2b OSHA _____ None _____ (TDI)

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MSDS No. ~~V762010~~ Date Issued: ~~10/25/85~~
Date Revised: 12/9/91; Supercedes: 9/11/87 B-2

IDENTIFICATION

Trade Name: VIBRATHANE® B-625

CAS Number: Mixture

Chemical Name: Reaction product of a polyether with diphenylmethane diisocyanate (MDI)

Chemical Family: Polyurethane

SPECIAL REGULATORY HAZARDS

Ingredient	CAS No.	Exposure Limit	OSHA (1910.1200)	EEC*
MDI	101-68-8	0.02 ppm, ceiling (OSHA) 0.005 ppm, TWA (ACGIH)	Sensitizer	Sensitizer

Hazard assessment based on available data.

Transportation: NA

PHYSICAL DATA

Appearance and Odor: Viscous liquid; slight odor

Solubility: Reacts in water, soluble in THF, DMF, or methylene chloride

Melting Point: ND

Boiling Point: ND

Other Data: Solidification Point: 72°F (22°C)
Reactive Isocyanate (NCO): 3.0 - 10.6

Specific Gravity (H_2O = 1): 1.02 - 1.09

Vapor Pressure @ 20° C. ND

Vapor Density (Air = 1): ND

Volatility @ 70° F: Low

FIRE AND EXPLOSION HAZARD DATA

Flash Point: 350°F (177°C) CC

Autoignition Temp: ND

Extinguishing Media: Water spray, dry chemical

Flammable Limits: ND

Special Fire Fighting Procedures: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

Unusual Hazards: None identified.

REACTIVITY DATA

Stability: Stable at ambient temperatures and pressures.

Incompatibility: Avoid contamination with water, solvents and any foreign matter.

Decomposition Products: High temperatures will release cyanates and hydrocarbons. Oxides of carbon, nitrogen and small amount of HCN under burning conditions.

NA = Not Applicable ND = Not Determined *European Economic Community

SPECIAL PROTECTION INFORMATION

Engineering Controls: Local exhaust ventilation strongly recommended.

Personal Protection Equipment: Chemical resistant gloves and goggles should be worn. Avoid breathing vapors. In the absence of good ventilation, under emergency situations or for high concentrations, self-contained or air-supplied respiratory protection is recommended.

STORAGE, SPILLS AND DISPOSAL INFORMATION

Storage: Store away from sources of direct heat and moisture. Seal containers with a dry nitrogen blanket and keep closed when not in use. Moisture contamination will evolve CO_2 and create pressure in closed systems.

Spills: Absorb on inert carrier. Transfer to open containers outside or in well-ventilated area. Soak with dilute ammonia hydroxide or water alcohol mixture. Allow time for reaction to be complete before disposal.

Disposal: In a well ventilated area, fill drums with a couple of inches of water. Leave bung off and slowly shake and roll drum to allow water contact. Leave open to air for sufficient time to cure. Cured polyurethane is not a RCRA hazardous waste. Dispose of in accordance with local, state or federal regulations regarding polymeric waste. WARNING! Burning this material can produce toxic fumes.

Environmental Information: Environmental effects have not been determined.

HEALTH RELATED DATA

Specific Hazard(s): Contact with eyes and skin may cause irritation. Repeated, minimal contact with skin may cause sensitization. Exposure to vapor can cause irritation to eyes, lungs and mucous membranes. Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma. Individuals with respiratory problems should avoid exposure to this material.

Primary Route(s) of Entry: Inhalation, skin absorption.

First Aid Procedures: **Eye contact:** Flush with water for 15 minutes. Get medical attention.

Skin contact: Wipe excess. Wash with rubbing alcohol, if available, followed by soap and water. Discard shoes if contaminated.

Inhalation: Remove to fresh air. **Physician -** treat for potential respiratory irritation.

Toxicology Information:

Sensitization: Respiratory and dermal sensitizer based upon human experience (MDI)

Mutagenicity: Ames *Salmonella* - positive (MDI)

SARA TITLE III (40CFR 372)
SECTION 313 TOXIC CHEMICALS NOTIFICATION

TOXIC CHEMICAL	CAS #	% (BY WT.)
Diphenylmethane diisocyanate	101-68-8	11.6

Carcinogenic per NTP _____ IARC _____ OSHA _____ None X

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MSDS No. V762021 Date Issued: 10/25/85
Date Revised: 12/9/91; Supercedes: 9/11/87 R-2

IDENTIFICATION

Trade Name: VIBRATHANE® B-670 CAS Number: Mixture

Chemical Name: Reaction product of a polyether with diphenylmethane diisocyanate (MDI) Chemical Family: Polyurethane

SPECIAL REGULATORY HAZARDS

Ingredient	CAS No.	Exposure Limit	OSHA (1910.1200)	EEC*
MDI	101-68-8	0.02 ppm, ceiling (OSHA) 0.005 ppm, TWA (ACGIH)	Sensitizer	Sensitizer

Hazard assessment based on available data.

Transportation: NA

PHYSICAL DATA

Appearance and Odor: Viscous liquid; slight odor

Solubility: Reacts in water, soluble in THF, DMF, or methylene chloride

Melting Point: ND

Boiling Point: ND

Other Data: Solidification Point: 72°F (22°C)
Reactive Isocyanate (NCO): 3.0 - 10.6

Specific Gravity (H_2O = 1): 1.02 - 1.09

Vapor Pressure @ 20° C. ND

Vapor Density (Air = 1): ND

Volatility @ 70° F: Low

FIRE AND EXPLOSION HAZARD DATA

Flash Point: 350°F (177°C) CC

Autoignition Temp: ND

Extinguishing Media: Water spray, dry chemical

Flammable Limits: ND

Special Fire Fighting Procedures: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

Unusual Hazards: None identified.

REACTIVITY DATA

Stability: Stable at ambient temperatures and pressures.

Incompatibility: Avoid contamination with water, solvents and any foreign matter.

Decomposition Products: High temperatures will release cyanates and hydrocarbons. Oxides of carbon, nitrogen and small amount of HCN under burning conditions.

NA = Not Applicable ND = Not Determined *European Economic Community

SPECIAL PROTECTION INFORMATION

Engineering Controls: Local exhaust ventilation strongly recommended.

Personal Protection Equipment: Chemical resistant gloves and goggles should be worn. Avoid breathing vapors. In the absence of good ventilation, under emergency situations or for high concentrations, self-contained or air-supplied respiratory protection is recommended.

STORAGE, SPILLS AND DISPOSAL INFORMATION

Storage: Store away from sources of direct heat and moisture. Seal containers with a dry nitrogen blanket and keep closed when not in use. Moisture contamination will evolve CO_2 and create pressure in closed systems.

Spills: Absorb on inert carrier. Transfer to open containers outside or in well-ventilated area. Soak with dilute ammonia hydroxide or water alcohol mixture. Allow time for reaction to be complete before disposal.

Disposal: In a well ventilated area, fill drums with a couple of inches of water. Leave bung off and slowly shake and roll drum to allow water contact. Leave open to air for sufficient time to cure. Cured polyurethane is not a RCRA hazardous waste. Dispose of in accordance with local, state or federal regulations regarding polymeric waste. WARNING! Burning this material can produce toxic fumes.

Environmental Information: Environmental effects have not been determined.

HEALTH RELATED DATA

Specific Hazard(s): Contact with eyes and skin may cause irritation. Repeated, minimal contact with skin may cause sensitization. Exposure to vapor can cause irritation to eyes, lungs and mucous membranes. Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma. Individuals with respiratory problems should avoid exposure to this material.

Primary Route(s) of Entry: Inhalation, skin absorption.

First Aid Procedures: **Eye contact:** Flush with water for 15 minutes. Get medical attention.

Skin contact: Wipe excess. Wash with rubbing alcohol, if available, followed by soap and water. Discard shoes if contaminated.

Inhalation: Remove to fresh air. **Physician -** treat for potential respiratory irritation.

Toxicology Information:

Sensitization: Respiratory and dermal sensitizer based upon human experience (MDI)

Mutagenicity: Ames *Salmonella* - positive (MDI)

SARA TITLE III (40CFR 372)
SECTION 313 TOXIC CHEMICALS NOTIFICATION

TOXIC CHEMICAL	CAS #	% (BY WT.)
Diphenylmethane diisocyanate	101-68-8	22.1

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Carcinogenic per NTP _____ IARC _____ OSHA _____ None X

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MSDS No. V762034 Date Issued: 10/25/85
Date Revised: 12/9/91; Supercedes: 9/11/87 R-2

IDENTIFICATION

Trade Name: VIBRATHANE® B-821 CAS Number: Mixture

Chemical Name: Reaction product of a polyether with diphenylmethane diisocyanate (MDI) Chemical Family: Polyurethane

SPECIAL REGULATORY HAZARDS

Ingredient	CAS No.	Exposure Limit	OSHA (1910.1200)	EEC*
MDI	101-68-8	0.02 ppm, ceiling (OSHA) 0.005 ppm, TWA (ACGIH)	Sensitizer	Sensitizer

Hazard assessment based on available data.

Transportation: NA

PHYSICAL DATA

Appearance and Odor: Viscous liquid; slight odor

Solubility: Reacts in water, soluble in THF, DMF, or methylene chloride

Melting Point: ND

Boiling Point: ND

Other Data: Solidification Point: 72°F (22°C)
Reactive Isocyanate (NCO): 3.0 - 10.6

Specific Gravity (H_2O = 1): 1.02 - 1.09

Vapor Pressure @ 20° C. ND

Vapor Density (Air = 1): ND

Volatility @ 70° F: Low

FIRE AND EXPLOSION HAZARD DATA

Flash Point: 350°F (177°C) CC

Autoignition Temp: ND

Extinquishing Media: Water spray, dry chemical

Flammable Limits: ND

Special Fire Fighting Procedures: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

Unusual Hazards: None identified.

REACTIVITY DATA

Stability: Stable at ambient temperatures and pressures.

Incompatibility: Avoid contamination with water, solvents and any foreign matter.

Decomposition Products: High temperatures will release cyanates and hydrocarbons. Oxides of carbon, nitrogen and small amount of HCN under burning conditions.

NA = Not Applicable ND = Not Determined *European Economic Community

SPECIAL PROTECTION INFORMATION

Engineering Controls: Local exhaust ventilation strongly recommended.

Personal Protection Equipment: Chemical resistant gloves and goggles should be worn. Avoid breathing vapors. In the absence of good ventilation, under emergency situations or for high concentrations, self-contained or air-supplied respiratory protection is recommended.

STORAGE, SPILLS AND DISPOSAL INFORMATION

Storage: Store away from sources of direct heat and moisture. Seal containers with a dry nitrogen blanket and keep closed when not in use. Moisture contamination will evolve CO_2 and create pressure in closed systems.

Spills: Absorb on inert carrier. Transfer to open containers outside or in well-ventilated area. Soak with dilute ammonia hydroxide or water alcohol mixture. Allow time for reaction to be complete before disposal.

Disposal: In a well ventilated area, fill drums with a couple of inches of water. Leave bung off and slowly shake and roll drum to allow water contact. Leave open to air for sufficient time to cure. Cured polyurethane is not a RCRA hazardous waste. Dispose of in accordance with local, state or federal regulations regarding polymeric waste. WARNING! Burning this material can produce toxic fumes.

Environmental Information: Environmental effects have not been determined.

HEALTH RELATED DATA

Specific Hazard(s): Contact with eyes and skin may cause irritation. Repeated, minimal contact with skin may cause sensitization. Exposure to vapor can cause irritation to eyes, lungs and mucous membranes. Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma. Individuals with respiratory problems should avoid exposure to this material.

Primary Route(s) of Entry: Inhalation, skin absorption.

First Aid Procedures: **Eye contact:** Flush with water for 15 minutes. Get medical attention.

Skin contact: Wipe excess. Wash with rubbing alcohol, if available, followed by soap and water. Discard shoes if contaminated.

Inhalation: Remove to fresh air. **Physician -** treat for potential respiratory irritation.

Toxicology Information:

Sensitization: Respiratory and dermal sensitizer based upon human experience (MDI)

Mutagenicity: Ames *Salmonella* - positive (MDI)

SARA TITLE III (40CFR 372)
SECTION 313 TOXIC CHEMICALS NOTIFICATION

TOXIC CHEMICAL	CAS #	% (BY WT.)
Diphenylmethane diisocyanate	101-68-8	14.3

UNIROYAL CHEMICAL

Carcinogenic per NTP _____ IARC _____ OSHA _____ None X

UNIROYAL CHEMICAL

Material Safety Data Sheet

Uniroyal Chemical Company, Inc.
World Headquarters
Middlebury, CT 06749

UNIROYAL Emergency Phone: (203) 723-3670
CHEMTREC Transportation Emergency Phone: 1-800-424-9300
SAFETY DATA Information (203) 573-3303

MSDS No. V762042 Date Issued: 10/25/85
Date Revised: 12/9/91; Supercedes: 9/11/87 R-2

IDENTIFICATION

Trade Name: VIBRATHANE® B-836 CAS Number: Mixture

Chemical Name: Reaction product of a polyether with diphenylmethane diisocyanate (MDI) Chemical Family: Polyurethane

SPECIAL REGULATORY HAZARDS

Ingredient	CAS No.	Exposure Limit	OSHA (1910.1200)	EEC*
MDI	101-68-8	0.02 ppm, ceiling (OSHA) 0.005 ppm, TWA (ACGIH)	Sensitizer	Sensitizer

Hazard assessment based on available data.

Transportation: NA

PHYSICAL DATA

Appearance and Odor: Viscous liquid; slight odor

Solubility: Reacts in water, soluble in THF, DMF, or methylene chloride

Melting Point: ND

Boiling Point: ND

Other Data: Solidification Point: 72°F (22°C) Reactive Isocyanate (NCO): 3.0 - 10.6

Specific Gravity (H_2O = 1): 1.02 - 1.09

Vapor Pressure @ 20° C. ND

Vapor Density (Air = 1): ND

Volatility @ 70° F: Low

FIRE AND EXPLOSION HAZARD DATA

Flash Point: 350°F (177°C) CC

Autoignition Temp: ND

Extinquishing Media: Water spray, dry chemical

Flammable Limits: ND

Special Fire Fighting Procedures: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

Unusual Hazards: None identified.

REACTIVITY DATA

Stability: Stable at ambient temperatures and pressures.

Incompatibility: Avoid contamination with water, solvents and any foreign matter.

Decomposition Products: High temperatures will release cyanates and hydrocarbons. Oxides of carbon, nitrogen and small arhount of HCN under burning conditions.

NA = Not Applicable ND = Not Determined *European Economic Community

SPECIAL PROTECTION INFORMATION

Engineering Controls: Local exhaust ventilation strongly recommended.

Personal Protection Equipment: Chemical resistant gloves and goggles should be worn. Avoid breathing vapors. In the absence of good ventilation, under emergency situations or for high concentrations, self-contained or air-supplied respiratory protection is recommended.

STORAGE, SPILLS AND DISPOSAL INFORMATION

Storage: Store away from sources of direct heat and moisture. Seal containers with a dry nitrogen blanket and keep closed when not in use. Moisture contamination will evolve CO_2 and create pressure in closed systems.

Spills: Absorb on inert carrier. Transfer to open containers outside or in well-ventilated area. Soak with dilute ammonia hydroxide or water alcohol mixture. Allow time for reaction to be complete before disposal.

Disposal: In a well ventilated area, fill drums with a couple of inches of water. Leave bung off and slowly shake and roll drum to allow water contact. Leave open to air for sufficient time to cure. Cured polyurethane is not a RCRA hazardous waste. Dispose of in accordance with local, state or federal regulations regarding polymeric waste. WARNING! Burning this material can produce toxic fumes.

Environmental Information: Environmental effects have not been determined.

HEALTH RELATED DATA

Specific Hazard(s): Contact with eyes and skin may cause irritation. Repeated, minimal contact with skin may cause sensitization. Exposure to vapor can cause irritation to eyes, lungs and mucous membranes. Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma. Individuals with respiratory problems should avoid exposure to this material.

Primary Route(s) of Entry: Inhalation, skin absorption.

First Aid Procedures:

Eye contact: Flush with water for 15 minutes. Get medical attention.

Skin contact: Wipe excess. Wash with rubbing alcohol, if available, followed by soap and water. Discard shoes if contaminated.

Inhalation: Remove to fresh air. **Physician -** treat for potential respiratory irritation.

Toxicology Information:

Sensitization: Respiratory and dermal sensitizer based upon human experience (MDI)

Mutagenicity: Ames *Salmonella* - positive (MDI)

SARA TITLE III (40CFR 372)
SECTION 313 TOXIC CHEMICALS NOTIFICATION

TOXIC CHEMICAL	CAS #	% (BY WT.)
Diphenylmethane diisocyanate	101-68-8	21.3

Carcinogenic per NTP _____ IARC _____ OSHA _____ None X

UNIROYAL CHEMICAL

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MSDS No. V762096 Date Issued: 10/25/85
Date Revised: 12/9/91 R-1

IDENTIFICATION

Trade Name: VIBRATHANE® B-895 CAS Number: Mixture

Chemical Name: Reaction product of a polyether with diphenylmethane diisocyanate (MDI) Chemical Family: Polyurethane

SPECIAL REGULATORY HAZARDS

Ingredient	CAS No.	Exposure Limit	OSHA (1910.1200)	EEC*
MDI	101-68-8	0.02 ppm, ceiling (OSHA) 0.005 ppm, TWA (ACGIH)	Sensitizer	Sensitizer

Hazard assessment based on available data.

Transportation: NA

PHYSICAL DATA

Appearance and Odor: Viscous liquid; slight odor

Solubility: Reacts in water, soluble in THF, DMF, or methylene chloride

Melting Point: ND

Boiling Point: ND

Other Data: Solidification Point: 72°F (22°C)
Reactive Isocyanate (NCO): 3.0 - 10.6

Specific Gravity (H_2O = 1): 1.02 - 1.09

Vapor Pressure @ 20° C. ND

Vapor Density (Air = 1): ND

Volatility @ 70° F: Low

FIRE AND EXPLOSION HAZARD DATA

Flash Point: 350°F (177°C) CC

Autoignition Temp: ND

Extinguishing Media: Water spray, dry chemical

Flammable Limits: ND

Special Fire Fighting Procedures: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

Unusual Hazards: None identified.

REACTIVITY DATA

Stability: Stable at ambient temperatures and pressures.

Incompatibility: Avoid contamination with water, solvents and any foreign matter.

Decomposition Products: High temperatures will release cyanates and hydrocarbons. Oxides of carbon, nitrogen and small amount of HCN under burning conditions.

NA = Not Applicable ND = Not Determined *European Economic Community

SPECIAL PROTECTION INFORMATION

Engineering Controls: Local exhaust ventilation strongly recommended.

Personal Protection Equipment: Chemical resistant gloves and goggles should be worn. Avoid breathing vapors. In the absence of good ventilation, under emergency situations or for high concentrations, self-contained or air-supplied respiratory protection is recommended.

STORAGE, SPILLS AND DISPOSAL INFORMATION

Storage: Store away from sources of direct heat and moisture. Seal containers with a dry nitrogen blanket and keep closed when not in use. Moisture contamination will evolve CO_2 and create pressure in closed systems.

Spills: Absorb on inert carrier. Transfer to open containers outside or in well-ventilated area. Soak with dilute ammonia hydroxide or water alcohol mixture. Allow time for reaction to be complete before disposal.

Disposal: In a well ventilated area, fill drums with a couple of inches of water. Leave bung off and slowly shake and roll drum to allow water contact. Leave open to air for sufficient time to cure. Cured polyurethane is not a RCRA hazardous waste. Dispose of in accordance with local, state or federal regulations regarding polymeric waste. WARNING! Burning this material can produce toxic fumes.

Environmental Information: Environmental effects have not been determined.

HEALTH RELATED DATA

Specific Hazard(s): Contact with eyes and skin may cause irritation. Repeated, minimal contact with skin may cause sensitization. Exposure to vapor can cause irritation to eyes, lungs and mucous membranes. Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma. Individuals with respiratory problems should avoid exposure to this material.

Primary Route(s) of Entry: Inhalation, skin absorption.

First Aid Procedures: **Eye contact:** Flush with water for 15 minutes. Get medical attention.

Skin contact: Wipe excess. Wash with rubbing alcohol, if available, followed by soap and water. Discard shoes if contaminated.

Inhalation: Remove to fresh air. **Physician** - treat for potential respiratory irritation.

Toxicology Information:

Sensitization: Respiratory and dermal sensitizer based upon human experience (MDI)

Mutagenicity: Ames *Salmonella* - positive (MDI)

SARA TITLE III (40CFR 372)
SECTION 313 TOXIC CHEMICALS NOTIFICATION

TOXIC CHEMICAL	CAS #	% (BY WT.)
Diphenylmethane diisocyanate	101-68-8	16.2

UNIROYAL CHEMICAL

Carcinogenic per NTP _____ IARC _____ OSHA _____ None X

UNIROYAL CHEMICAL

Material Safety Data Sheet

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MSDS No. V752006 Date Issued: 10/25/85
Date Revised: 5/5/92; Supercedes: 12/9/91 R-3

IDENTIFICATION

Trade Name: ADIPRENE® L-167 CAS Number: NA

Chemical Name: Reaction product of a polyether with toluene diisocyanate (TDI) Chemical Family: Polyurethane

SPECIAL REGULATORY HAZARDS

Ingredient	CAS No.	Exposure Limit	OSHA (1910.1200)	EEC*
TDI	584-84-9	.005 ppm, TWA 0.02 ppm, STEL (OSHA, ACGIH)	Irritant Sensitizer Carcinogen (NTP, IARC 2b)	Irritant Sensitizer Irreversible effects

Hazard assessment based on available data.

Transportation: NA

PHYSICAL DATA

Appearance and Odor: Honey-colored liquid; slight odor

Solubility: Reacts in water, soluble in THF, DMF or methylene chloride

Melting Point: ND

Boiling Point: ND

Other Data: NA

Specific Gravity (H_2O = 1): 1.03 - 1.15

Vapor Pressure @ 20° C. ND

Vapor Density (Air = 1): ND

Volatility @ 70° F: Low

FIRE AND EXPLOSION HAZARD DATA

Flash Point: 350°F (177°C) CC Autoignition Temp: ND

Extinquishing Media: Water spray, dry chemical Flammable Limits: ND

Special Fire Fighting Procedures: Protect against inhalation of cyanate vapors and other decomposition/combustion products.

Unusual Hazards: None identified.

REACTIVITY DATA

Stability: Stable at ambient temperatures and pressures.

Incompatibility: Avoid contamination with water, strong oxidizers or alcohol.

Decomposition Products: High temperatures will release cyanates and hydrocarbons. Oxides of carbon, nitrogen and small amount of HCN under burning conditions.

NA = Not Applicable ND = Not Determined *European Economic Community

SPECIAL PROTECTION INFORMATION

Engineering Controls: Local exhaust ventilation strongly recommended.

Personal Protection Equipment: Chemical resistant gloves and goggles should be worn. Avoid breathing vapors. In the absence of good ventilation, under emergency situations or for high concentrations, self-contained or air-supplied respiratory protection is recommended.

STORAGE, SPILLS AND DISPOSAL INFORMATION

Storage: Store away from sources of direct heat and moisture. Seal containers with a dry nitrogen blanket and keep closed when not in use. Moisture contamination will evolve CO_2 and create pressure in closed systems.

Spills: Absorb on inert carrier. Transfer to open containers outside or in well-ventilated area. Soak with dilute ammonia hydroxide or water alcohol mixture. Allow time for reaction to be complete before disposal.
Reportable Quantity - 100 lbs. (TDI)

Disposal: In accordance with any applicable local, state or federal regulation regarding polymeric waste.

Environmental Information: Environmental effects have not been determined.

HEALTH RELATED DATA

Specific Hazard(s): Contact with eyes and skin may cause irritation. Repeated, minimal contact with skin may cause sensitization. Exposure to vapor can cause irritation to eyes, lungs and mucous membranes. Repeated inhalation of minimal amounts of vapor can cause respiratory sensitization and asthma.

Primary Route(s) of Entry: Inhalation, skin absorption.

First Aid Procedures: **Eye contact:** Flush with water for 15 minutes. Get medical attention.
Skin contact: Wipe excess. Wash with rubbing alcohol, if available, followed by soap and water. Discard shoes if contaminated.
Inhalation: Remove to fresh air. **Physician -** treat for potential respiratory irritation.

Toxicology Information:

There are no acute toxicology data on this material, however, residual TDI (0.02 - 4.0%) does possess irritancy and sensitization potential.
Chronic: Oral gavage administration of TDI in corn oil to rats and mice for 2 years resulted in an increased incidence of tumors. Six hour daily inhalation exposures to rats and mice of 0.05 and 0.15 ppm TDI for 2 years did not produce tumors. Since inhalation is the usual route of human exposure, the carcinogenic potential of TDI to humans has not been established.

SARA TITLE III (40CFR 372)
SECTION 313 TOXIC CHEMICALS NOTIFICATION

TOXIC CHEMICAL	CAS #	% (BY WT.)
2,4-toluene diisocyanate	584-84-9	2.1
2,6-toluene diisocyanate	91-08-7	0.3

UNIROYAL CHEMICAL

Carcinogenic per NTP X IARC 2b OSHA _____ None _____ (TDI)