

**NPR 5470**

Version 3.0

Revision Date 07/09/2008

Ref. 15000002498

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	NPR 5470
Product Grade/Type	:	NPR 5470
MSDS Number	:	15000002498
Product Use	:	Chemical intermediate
Manufacturer	:	DuPont Performance Elastomers L.L.C Bellevue Park Corporate Center, 300 Bellevue Parkway Wilmington, Delaware 19809
Product Information	:	1-800-441-7515 (outside the U.S. 1-302-774-1000)
Medical Emergency	:	1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency	:	CHEMTREC: 1-800-424-9300 (outside the U.S. 703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Potential Health Effects

Skin

2,3-Dichloro-1,3-Butadiene : May cause skin irritation.

Dichloromethane : Causes skin irritation.

Eyes

2,3-Dichloro-1,3-Butadiene : May cause eye irritation.

Dichloromethane : Causes eye irritation.

Inhalation

2,3-Dichloro-1,3-Butadiene : May cause irritation of respiratory tract. Cough, Breathing difficulties, Severe shortness of breath, Lung damage, Liver damage, Kidney damage, Respiratory tract damage.

Dichloromethane : Liver effects Altered lung function or difficulty breathing, altered blood chemistry, Inhalation of high vapour concentrations can cause CNS-depression and narcosis..

Ingestion

Dichloromethane : Central nervous system depression Gastrointestinal ulceration, altered blood chemistry.

Repeated exposure

Dichloromethane : Liver damage altered blood chemistry

Target Organs

2,3-Dichloro-1,3- : Lungs Liver Kidney Testes

**NPR 5470**

Version 3.0

Revision Date 07/09/2008

Ref. 150000002498

Butadiene

Dichloromethane : Liver Lungs Blood

Carcinogenicity
Material

IARC

NTP

OSHA

ACGIH

Dichloromethane

2B

X

X

A3

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
2,3-Dichloro-1,3-Butadiene	1653-19-6	>55%
Dichloromethane	75-09-2	<40 %
1,2-Dichloro-1,3-butadiene	3574-40-1	<3 %

SECTION 4. FIRST AID MEASURES

Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before re-use. Discard contaminated shoes.
Eye contact	: Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.
Inhalation	: Move to fresh air. Consult a physician.
Ingestion	: If victim is conscious: Do not induce vomiting. Drink water. Call physician immediately.
General advice	: If symptoms persist, call a physician.
Notes to physician	: Activated charcoal may be beneficial.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable Properties	
Flash point	: 26.7 °C (80.1 °F) closed cup
Fire and Explosion Hazard	: Hazardous combustion products Hydrogen chloride Carbon dioxide (CO ₂) Under conditions giving incomplete combustion, hazardous gases produced may consist of: Hydrogen chloride gas Carbon oxides Organic acids Aldehydes Alcohols



NPR 5470

Version 3.0

Revision Date 07/09/2008

Ref. 150000002498

- Extinguishing Media : Foam, Carbon dioxide (CO2), Dry chemical, Water spray
- Firefighting Instructions : Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Wear self-contained breathing apparatus and protective suit.
- Spill Cleanup : Remove all sources of ignition. Dam up. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
- Accidental Release Measures : Prevent material from entering sewers, waterways, or low areas. Dispose of promptly.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Use only in area provided with appropriate exhaust ventilation. Avoid contact with skin, eyes and clothing. Avoid breathing vapours or mist. Wash hands before breaks and immediately after handling the product. Regular cleaning of equipment, work area and clothing. When using do not eat, drink or smoke.
- Handling (Physical Aspects) : Keep away from heat and sources of ignition. Use non-sparking tools and grounded/bonded equipment and containers when transferring.
- Storage : Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat, sparks and flames.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls : Use only in area provided with appropriate exhaust ventilation.
- Personal protective equipment
 - Eye protection : Wear safety glasses. Wear coverall chemical splash goggles and face shield when the possibility exists for eye and face contact due to splashing or spraying of material.
 - Skin protection : Wear as appropriate: To prevent any contact, wear impervious clothing such as gloves, apron, boots, jacket, pants, hood or totally encapsulating chemical suit with breathing air supply.



NPR 5470

Version 3.0

Revision Date 07/09/2008

Ref. 15000002498

Respiratory protection : Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

Exposure Guidelines

Exposure Limit Values

Hydrogen chloride (gas)

PEL	(OSHA)	5 ppm	7 mg/m3	Ceiling
TLV	(ACGIH)	2 ppm	Ceiling	

2,3-Dichloro-1,3-Butadiene

AEL *	(DUPONT)	2 ppm	8 & 12 hr. TWA	
-------	----------	-------	----------------	--

Skin designation applies.

Dichloromethane

PEL	(OSHA)	125 ppm	STEL	
PEL	(OSHA)	25 ppm	TWA	
TLV	(ACGIH)	50 ppm	TWA	
AEL *	(DUPONT)	25 ppm	12 hr. TWA	
AEL *	(DUPONT)	50 ppm	8 hr. TWA	

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: liquid
Color	: light yellow
Odor	: hydrocarbon-like
Boiling point	: ca. 102 °C (216 °F) (for a component of this mixture)
% Volatile	: 100 %
Density	: 1.239 g/cm3
Water solubility	: slightly soluble

SECTION 10. STABILITY AND REACTIVITY

Stability	: This material readily polymerizes with the evolution of heat, particularly in the absence of polymerization inhibitors. This material readily dimerizes especially at elevated temperature. The dimerization reaction can not be prevented. However, the rate of dimerization can be reduced by dilution and/or low temperature (0 degree C) storage. See Product Bulletin "Safety and Handling of Dichlorobutadiene" (H71078) for additional handling information. Material can spontaneously polymerize by addition of oxidizing agents or peroxides or exposure to air.
Conditions to avoid	: Heat, flames and sparks. Elevated temperature
Incompatibility	: Peroxides Oxidizing agents Air Polymerization catalyst This material readily absorbs oxygen to form peroxides, which can decompose violently. They can

**NPR 5470**

Version 3.0

Revision Date 07/09/2008

Ref. 15000002498

also decompose to free radicals which can initiate polymerization.

Polymerization : Polymerization can occur.

SECTION 11. TOXICOLOGICAL INFORMATION

2,3-Dichloro-1,3-Butadiene

- Oral LD50 : 222 mg/kg, rat
- Inhalation 4 h LC50 : 414 ppm, rat
- Inhalation : Respiratory tract irritation
Fluid retention in lungs (pulmonary oedema)
Lung damage
Liver damage
Kidney damage
- Skin irritation : irritant
- Eye irritation : irritant
- Repeated dose toxicity : Inhalation
Respiratory effects, Liver effects, Pathologic changes, Respiratory Tract
- Mutagenicity : Experiments showed mutagenic effects in cultured bacterial cells.,
Animal testing did not show any mutagenic effects.
- Toxicity to reproduction : Animal testing showed no reproductive toxicity.
- Teratogenicity : Animal testing showed effects on embryo-foetal development at levels
equal to or above those causing maternal toxicity.

Dichloromethane

- Dermal LD50 : > 2,000 mg/kg, rat
- Oral LD50 : 1,410 mg/kg, rat
- Inhalation 4 h ALC : 48.58 mg/l, rat
- Skin irritation : Species: rabbit
irritant
- Eye irritation : Species: rabbit
irritant
- Repeated dose toxicity : Inhalation, rat
Liver damage, Lung damage



NPR 5470

Version 3.0

Revision Date 07/09/2008

Ref. 15000002498

Oral, rat
Liver damage, Lung damage

- Carcinogenicity : An increased incidence of tumours was observed in laboratory animals.
- Mutagenicity : Experiments showed mutagenic effects in cultured bacterial cells., Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others., Genetic damage in animals was observed in some laboratory tests but not in others.
- Toxicity to reproduction : Evidence suggests the substance is not a reproductive toxin in animals.
- Teratogenicity : Animal testing showed effects on embryo-foetal development at levels equal to or above those causing maternal toxicity.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

2,3-Dichloro-1,3-Butadiene

- 96 h LC50 : Lepomis macrochirus (Bluegill sunfish) 70 mg/l
- 96 h LC50 : Zebra fish 10.1 mg/l
- 72 h EC50 : Algae > 2.1 mg/l
- 48 h EC50 : Daphnia magna (Water flea) 1.5 mg/l
- 3 h Respiration inhibition : EC50 1,700 mg/l no data available

Dichloromethane

- 96 h LC50 : Pimephales promelas (fathead minnow) 193 mg/l
- 48 h EC50 : Daphnia magna (Water flea) 220 mg/l

Environmental Fate

2,3-Dichloro-1,3-Butadiene

- Biodegradability : Not readily biodegradable.

SECTION 13. DISPOSAL CONSIDERATIONS

- Waste Disposal : Dispose of wastes in an approved waste disposal facility. Incinerate only in incinerators capable of scrubbing out acidic combustion products. Comply with applicable Federal, State/Provincial and Local Regulations.
- Container Disposal : Refer to the product label for instructions.



NPR 5470

Version 3.0

Revision Date 07/09/2008

Ref. 150000002498

SECTION 14. TRANSPORT INFORMATION

DOT	UN-Number	: 2929
	Proper shipping name	: Toxic liquids, flammable, organic, n.o.s. (Dichlorobutadiene, Methylene chloride)
	Class	: 6.1
	Packaging group	: II
	Labelling No.	: 6.1 (3)
	Reportable Quantity	: 177 lbs (2,3-Dichloro-1,3-Butadiene)
	Reportable Quantity	: 2,506 lbs (Dichloromethane)
IATA_C	UN-Number	: 2929
	Proper shipping name	: Toxic liquid, flammable, organic, n.o.s. (Dichlorobutadiene, Methylene chloride)
	Class	: 6.1
	Packaging group	: II
	Labelling No.	: 6.1 (3)
IMDG	UN-Number	: 2929
	Proper shipping name	: Toxic liquid, flammable, organic, n.o.s. (Dichlorobutadiene, Methylene chloride)
	Class	: 6.1
	Packaging group	: II
	Labelling No.	: 6.1 (3)

SECTION 15. REGULATORY INFORMATION

TSCA Status	: In compliance with TSCA Inventory requirements for commercial purposes.
SARA 313 Regulated Chemical(s)	: Dichloromethane
CERCLA Reportable Quantity	: 177 lbs Based on the percentage composition of this chemical in the product.: 2,3-Dichloro-1,3-Butadiene
CERCLA Reportable Quantity	: 2,506 lbs Based on the percentage composition of this chemical in the product.: Dichloromethane
California Prop. 65	: WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm. Toluene WARNING! This product contains a chemical known in the State of California to cause cancer. Dichloromethane
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): 2,3-



NPR 5470

Version 3.0

Revision Date 07/09/2008

Ref. 150000002498

Dichloro-1,3-Butadiene, Dichloromethane

NJ Right to Know Regulated Chemical(s) : Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Dichloromethane, 2,3-Dichloro-1,3-Butadiene

SECTION 16. OTHER INFORMATION

Restrictions for use : Do not use in medical applications involving permanent implantation in the human body. For other medical applications see DuPont Performance Elastomer's caution bulletin No. H-69237.

Before use read DuPont Performance Elastomer's safety information.® Registered trademark of DuPont Performance Elastomers

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.