

Safety Data Sheet
acc. to OSHA HCS

Printing Date 09/01/2015

Revision Number 1

Revision Date 09/01/2015

1 Identification

- **Product identifier**
- **Trade name:** *Fortane MVS Ultra*
- **Relevant identified uses of the substance or mixture.** *Isocyanate*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Royal Adhesives & Sealants Canada Ltd
266 Humberline Drive - Toronto, Ontario, Canada M9W 5X1
Tel. +1 416-679-5676 Fax: +1 416-679-0511
- **Information department:** *Environment protection department.*
- **Emergency telephone number:**
Emergency Telephone Number: CANUTEC Collect: (613) 996-6666 (24-hour hotline)

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

- Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.*
- Muta. 1B H340 May cause genetic defects.*
- Repr. 1B H360 May damage fertility or the unborn child.*
- STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.*



GHS07

- Skin Sens. 1 H317 May cause an allergic skin reaction.*
- Flam. Liq. 4 H227 Combustible liquid.*
- Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.*

- **Label elements**
- **GHS label elements** *The product is classified and labeled according to the Globally Harmonized System (GHS).*
- **Hazard pictograms**



GHS08

- **Signal word** *Danger*
- **Hazard statements**
Combustible liquid.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause genetic defects.
May damage fertility or the unborn child.

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing Date 09/01/2015

Revision Number 1

Revision Date 09/01/2015

Trade name: Fortane MVS Ultra

(Contd. of page 1)

May cause damage to organs through prolonged or repeated exposure.

Harmful to aquatic life with long lasting effects.

· **Precautionary statements**

Keep away from flames and hot surfaces. – No smoking.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wear respiratory protection.

Wear protective gloves / eye protection / face protection.

Avoid release to the environment.

Contaminated work clothing must not be allowed out of the workplace.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Specific treatment (see on this label).

If experiencing respiratory symptoms: Call a poison center/doctor.

Wash contaminated clothing before reuse.

If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

IF exposed or concerned: Get medical advice/attention.

If skin irritation or rash occurs: Get medical advice/attention.

Get medical advice/attention if you feel unwell.

In case of fire: Use for extinction: CO₂, powder or water spray.

If on skin: Wash with plenty of water.

Store locked up.

Store in a well-ventilated place. Keep cool.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 2

Reactivity = 1

· **HMIS-ratings (scale 0 - 4)**

HEALTH	2
FIRE	2
PHYSICAL HAZARD	1

Health = 2

Fire = 2

Physical Hazard = 1

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Polyurethane

· **Hazardous components:**

64742-89-8	Solvent naphtha (petroleum), light aliph.(VM&P)	2.5-10%
101-68-8	4,4'-methylenediphenyl diisocyanate	≤2.5%
9016-87-9	diphenylmethanediisocyanate, isomers and homologues	≤2.5%
77-58-7	dibutyltin dilaurate	≤0.5%

USA

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing Date 09/01/2015

Revision Number 1

Revision Date 09/01/2015

Trade name: Fortane MVS Ultra

(Contd. of page 2)

4 First-aid measures

- **Description of first aid measures**

- **After inhalation:**

Remove to fresh air. If not breathing, administer artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

- **After skin contact:**

Wipe excess from skin.

Immediately wash with water and soap and rinse thoroughly.

If skin becomes irritated seek medical attention.

- **After eye contact:**

Rinse opened eye for 20 minutes under running water. If eye becomes irritated, obtain medical treatment.

- **After swallowing:**

Rinse out mouth with water. Drink 1 - 2 glasses of water but **DO NOT** induce vomiting. Do not give liquids to a drowsy, convulsing or unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

Seek medical treatment.

- **Information for doctor:**

- **Most important symptoms and effects, both acute and delayed** No further relevant information available.

- **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**

- **Suitable extinguishing agents:** CO₂, extinguishing powder or water spray. Fight larger fires with water spray.

- **For safety reasons unsuitable extinguishing agents:** Water

- **Special hazards arising from the substance or mixture**

Closed containers may forcibly rupture under extreme heat or when contents are contaminated with water.

Carbon Dioxide (CO₂) is formed.

- **Advice for firefighters**

- **Protective equipment:** Protective clothing and respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

- **Methods and material for containment and cleaning up:**

Cover spilled material with neutralization solution (see below) and mix Wait 15 minutes. Collect material in open-head metal containers. Repeat neutralization and cleaning process until surface is decontaminated. Apply drum lid but **DO NOT** secure. Allow containers to vent for 72 hours to let carbon dioxide escape.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose of contaminated material as waste in accordance with federal state and local regulations.

Ensure adequate ventilation.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

USA

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing Date 09/01/2015

Revision Number 1

Revision Date 09/01/2015

Trade name: Fortane MVS Ultra

(Contd. of page 3)

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Product reacts with water. Reaction may produce heat and/or gases. Container may rupture from gas generation in a fire situation. This reaction may be violent.
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Keep containers tightly closed when not in use. Protect from atmospheric moisture.
Store in a cool location away from direct heat.
- **Information about storage in one common storage facility:** Store away from water.
- **Further information about storage conditions:**
Protect from humidity and water.
Protect from contamination.
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

101-68-8 4,4'-methylenediphenyl diisocyanate

PEL	Ceiling limit value: 0.2 mg/m ³ , 0.02 ppm
REL	Long-term value: 0.05 mg/m ³ , 0.005 ppm Ceiling limit value: 0.2* mg/m ³ , 0.02* ppm *10-min
TLV	Long-term value: 0.051 mg/m ³ , 0.005 ppm

77-58-7 dibutyltin dilaurate

PEL	Long-term value: 0.1 mg/m ³ as Sn
REL	Long-term value: 0.1 mg/m ³ as Sn, Skin
TLV	Short-term value: 0.2 mg/m ³ Long-term value: 0.1 mg/m ³ as Sn; Skin

- **Additional information:**
MDI products have poor warning properties, since recognition of an odor is far above the TLV. Observe OSHA regulations for respirator use (29 CFR 1910.134).
The lists that were valid during the creation were used as basis.

(Contd. on page 5)

USA

Safety Data Sheet

acc. to OSHA HCS

Printing Date 09/01/2015

Revision Number 1

Revision Date 09/01/2015

Trade name: Fortane MVS Ultra

(Contd. of page 4)

- **Exposure controls**
- **Personal protective equipment (see listings below)**
- **General protective and hygienic measures:**
 Keep away from foodstuffs, beverages and feed.
 Immediately remove all soiled and contaminated clothing.
 Wash hands before breaks and at the end of work.
 Store protective clothing separately.

- **Breathing equipment:**

Airborne MDI concentrations greater than the ACGIH TLV-TWA or OSHA PEL can occur in inadequately ventilated environments when MDI is sprayed or heated. In such cases respiratory protection is require. Use approved respiratory protection equipment when airborne exposure is excessive. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves**

Butyl rubber, BR

Chloroprene rubber, CR

Nitrile rubber, NBR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**

Use full face shield over protective eye wear when there is a risk of a splash.
 Safety glasses with side shields.



Tightly sealed goggles

- **Body protection:**

Apron

Protective work clothing

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:

Liquid

Color:

Dark green

- **Odor:**

Characteristic

- **Odour threshold:**

Not determined.

- **pH-value:**

Not determined.

- **Change in condition**

Melting point:

Undetermined.

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing Date 09/01/2015

Revision Number 1

Revision Date 09/01/2015

Trade name: Fortane MVS Ultra

(Contd. of page 5)

· Boiling point: · Flash point:	73 °C (163 °F)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Vapor pressure:	Not determined.
· Specific gravity at 20 °C (68 °F):	1.47 g/cm ³ (12.267 lbs/gal)
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
· Dynamic:	Not determined.
· Kinematic:	Not determined.
· Solvent content:	
· Organic solvents:	5.1 %
· Other information	VOC's = 85 gm/liter

* 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
Contact with moisture, other materials that react with isocyanates, or temperatures above 350F (177C), may cause polymerization.
- **Possibility of hazardous reactions**
Violent reaction with water at high temperatures.
May produce violent reactions with bases and numerous organic substances including alcohols and amines.
MDI reacts slowly with water to form Carbon Dioxide gas. This gas can cause sealed containers to expand and possibly rupture. Contact with moisture, other materials that react with isocyanates, or temperatures above 350F, may cause polymerization.
- **Conditions to avoid**
Exposure to high temperatures.
Moisture
- **Incompatible materials:**
Reacts with amines, caustic alkali solutions, alcohols, ammonia, oxidizers, acids, polyols.
Reacts with water forming carbon dioxide-may rupture sealed containers if contaminated with water.
May produce violent reactions with bases and numerous organic substances including alcohols and amines.
copper and copper alloys.
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

USA

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing Date 09/01/2015

Revision Number 1

Revision Date 09/01/2015

Trade name: Fortane MVS Ultra

(Contd. of page 6)

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

101-68-8 4,4'-methylenediphenyl diisocyanate		
Oral	LD50	2200 mg/kg (mouse)

- **Primary irritant effect:**

- **on the skin:** May irritate the skin.

- **on the eye:**

May irritate the eye.

Vapors may be irritating to the eyes.

- **Sensitization:**

Inhalation - Sensitization possible through inhalation.

Skin Contact - Sensitization possible through skin contact.

- **Additional toxicological information:**

May cause allergic respiratory reaction.

Animal tests have indicated that respiratory sensitization can result from skin contact with MDI. Use skin protection.

Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product.

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

The product can cause inheritable damage.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

101-68-8	4,4'-methylenediphenyl diisocyanate	3
9016-87-9	diphenylmethanediisocyanate, isomeres and homologues	3

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

At present there are no ecotoxicological assessments.

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

(Contd. on page 8)

USA

Safety Data Sheet

acc. to OSHA HCS

Printing Date 09/01/2015

Revision Number 1

Revision Date 09/01/2015

Trade name: Fortane MVS Ultra

(Contd. of page 7)

- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

* 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Must be specially treated adhering to official regulations.
Disposal must be made according to official regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

* 14 Transport information

- | | |
|--|--|
| · UN-Number | |
| · DOT, ADR, ADN, IMDG, IATA | not regulated |
| · UN proper shipping name | |
| · DOT, ADR, ADN, IMDG, IATA | not regulated |
| · Transport hazard class(es) | |
| · DOT, ADR, ADN, IMDG, IATA | |
| · Class | not regulated |
| · Packing group | |
| · DOT, ADR, IMDG, IATA | not regulated |
| · Environmental hazards: | Not applicable. |
| · Special precautions for user | Not applicable. |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | MDI (CAS 101-68-8) exhibits a CERCLA RQ equal to 5,000 pounds. Quantities less than the RQ amount are not regulated in transportation. |
| · UN "Model Regulation": | - |

* 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

101-68-8 4,4'-methylenediphenyl diisocyanate

9016-87-9 diphenylmethanediisocyanate, isomeres and homologues

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing Date 09/01/2015

Revision Number 1

Revision Date 09/01/2015

Trade name: Fortane MVS Ultra

(Contd. of page 8)

· TSCA (Toxic Substances Control Act):

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

· Proposition 65
· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity:

None of the ingredients is listed.

· (DSL) Canada Domestic Substance List

All components of this product are on the DSL(Canada Domestic Substance list) or are exempt from DSL requirements.

· Cancerogeny categories
· EPA (Environmental Protection Agency)

101-68-8	4,4'-methylenediphenyl diisocyanate	D, CBD
9016-87-9	diphenylmethanediisocyanate, isomeres and homologues	CBD

· TLV (Threshold Limit Value established by ACGIH)

77-58-7	dibutyltin dilaurate	A4
---------	----------------------	----

· MAK (German Maximum Workplace Concentration)

101-68-8	4,4'-methylenediphenyl diisocyanate	4
9016-87-9	diphenylmethanediisocyanate, isomeres and homologues	4

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

· National regulations:
· Information about limitation of use:

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* 16 Other information

Although the information and recommendations set forth in this SDS are presented in good faith and are believed to be correct as of the date of this SDS, Royal Adhesives & Sealants makes no representations as to the completeness or accuracy thereof. Information is supplied on the condition that the persons receiving and using it will make their own determination as to the suitability for their purpose prior to use. In no event will Royal Adhesives & Sealants or any affiliate thereof be responsible for damages of any nature whatsoever resulting from the use or reliance on the information set forth in the SDS.

Although the information and recommendations set forth in this SDS are presented in good faith and are believed to be correct as of the date of this SDS, Royal Adhesives & Sealants makes no representations as to the completeness or accuracy thereof. Information is supplied on the condition that the persons receiving and using it will make their own determination as to the suitability for their purpose prior to use. In no event will Royal Adhesives & Sealants or any affiliate thereof be responsible for damages of any nature whatsoever resulting from the use or reliance on the information set forth in the SDS.

· **Department issuing SDS:** Environment protection department.

· **Creation Date:** 07/21/2015

· **Date of preparation / last revision** 09/01/2015 / -

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing Date 09/01/2015

Revision Number 1

Revision Date 09/01/2015

Trade name: Fortane MVS Ultra

(Contd. of page 9)

· Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 4: Flammable liquids, Hazard Category 4

Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Muta. 1B: Germ cell mutagenicity, Hazard Category 1B

Repr. 1B: Reproductive toxicity, Hazard Category 1B

STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3

USA