

Safety Data Sheet acc. to OSHA HCS

Print Date 07/14/2016

Revision Date 07/14/2016

- **Product Identifier**
 - **Trade Name:** UR1049 Cream B
 - **Application of the Substance or Mixture:** Isocyanates
- **Details of the Supplier of the Safety Data Sheet (SDS)**
 - **Manufacturer or Supplier:**
Resinlab, LLC
N109 W13300 Ellsworth Drive,
Germantown, WI 53022
1-800-388-8605
www.resinlab.com
 - **Information Department:** Product Safety Department: msds@resinlab.com
 - **Emergency Telephone Number:**
North America - Chemtrec: 1-800-424-9300 (24 hours)
International - Chemtrec: 01-703-527-3887 (24 hours)

2 Hazard(s) identification

- **Hazard Classification**
 - Acute Tox. 4 H332 Harmful if inhaled.
 - Skin Irrit. 2 H315 Causes skin irritation.
 - Eye Irrit. 2A H319 Causes serious eye irritation.
 - Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 - Skin Sens. 1 H317 May cause an allergic skin reaction.
 - Carc. 2 H351 Suspected of causing cancer.
 - STOT SE 3 H335 May cause respiratory irritation.
 - STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

- **Label Elements**

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

- **Pictogram(s)**



GHS07 GHS08

- **Signal Word** Danger

- **Hazard-determining Component(s)**

- Polymer of 4,4'-diisocyanatodiphenylmethane
- 4,4'-diisocyanatodiphenylmethane (Wetted form)
- Methylene diphenyl diisocyanate

- **Hazard statements**

- H332 Harmful if inhaled.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H317 May cause an allergic skin reaction.
- H351 Suspected of causing cancer.
- H335 May cause respiratory irritation.
- H373 May cause damage to organs through prolonged or repeated exposure.

- **Precautionary statements**

- Do not breathe dust/fume/gas/mist/vapors/spray.
- [In case of inadequate ventilation] wear respiratory protection.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Wash thoroughly after handling.
- Use only outdoors or in a well-ventilated area.
- Do not handle until all safety precautions have been read and understood.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- Call a POISON CENTER/doctor if you feel unwell.
- Wash contaminated clothing before reuse.
- If skin irritation or rash occurs: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.
- Get medical advice/attention if you feel unwell.
- IF ON SKIN: Wash with plenty of water.
- Store locked up.
- Store in a well-ventilated place. Keep container tightly closed.
- Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Hazard Rating System**

- **NFPA System**

- **NFPA Ratings (scale 0 - 4)**



Health = 2
Fire = 1
Reactivity = 1

NFPA special hazards (water reactivity and oxidizing property): None

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HMIS System

HMIS Ratings (scale 0 - 4)

HEALTH	2	Health = 2
FIRE	1	Fire = 1
REACTIVITY	1	Reactivity = 1

Other hazards

Results of PBT and vPvB assessment

- PBT: Not applicable.
- vPvB: Not applicable.

3 Composition/information on ingredients

Chemical Characterization: Mixtures

Composition/Information on Ingredients

CAS: 9016-87-9 RTECS: TR 0320000	Polymer of 4,4'-diisocyanatodiphenylmethane Resp. Sens. 1, H334 Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	40-50%
CAS: 101-68-8 EINECS: 202-966-0 Index Number: 615-005-00-9 RTECS: NQ 9350000	4,4'-diisocyanatodiphenylmethane (Wetted form) Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373 Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	30-40%
CAS: 26447-40-5 EINECS: 247-714-0 Index Number: 615-005-00-9	Methylene diphenyl diisocyanate Flam. Liq. 3, H226 Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373 Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	5-<10%

Classification System:

The Classifications were based on the Toxicological and Ecological Data of the substances/mixtures in the Section 11 and 12.

Additional Information:

If the chemical name/CAS number is proprietary and or weight percentage is listed as a range, the specific chemical identity and or percentage of composition has been withheld as a trade secret.

4 First-aid measures

Description of First Aid Measures

General Information

Symptoms may be delayed several hours after exposure; victims should be medically observed for at least 48 hours after exposure. Ensure medical personnel are aware of exposure and take precautions for their personal protection; see Section 8 for the information of personal protection.

After Inhalation

Remove victim from exposure to fresh air. Keep person at rest. Provide oxygen if person is not breathing. In case of unconsciousness place patient stably in side position for transportation. Seek immediate medical advice.

After Skin Contact

Remove all contaminated clothing and wash before reuse. Wash contaminated skin with water and soap and rinse thoroughly. Seek medical treatment in case of complaints.

After Eye Contact

Immediately bathe eyes for 15 minutes under running water. Immediately remove contact lenses if present. Continue rinsing. Seek medical advice.

After Swallowing

If victim is unconscious; never give anything by mouth. If victim is conscious, rinse out mouth and give two glasses of water. If swallowed obtain medical attention.

Information for Doctor

Indication of any Immediate Medical Attention and Special Treatment Needed

Check section 11 Toxicological Information for further relevant information.

Additional Information

For additional information, please consult the corresponding first aid measures in the most current version of Emergency Response Guidebook which is produced by the US Department of Transportation.

5 Fire-fighting measures

Extinguishing Media

Suitable Extinguishing Agent(s)

Use fire fighting measures and extinguishing agents that suit the environment.

In case of fire, suitable extinguishing agents are:

- Alcohol resistant foam.
- Dry chemical or fire-extinguishing powder.
- Carbon dioxide (CO₂).
- Water spray or water fog.

· **Unsuitable Extinguishing Agent(s)** No relevant information.

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- **Firefighting Procedures**
Isolate fire and deny unnecessary entry.
Eliminate all ignition sources if safe to do so.
Do not extinguish fire unless flow can be stopped.
Fight fire remotely due to the risk of explosion.
Burning liquids may be moved by flushing with water; protect personnel and minimize property damage.
Fight fire from protected location or safe distance.
Contain fire water runoff if possible to prevent environmental pollution.
- **Special Hazards Arising in Fire**
In case of fire, following can be released:
Isocyanate vapors and traces of hydrogen cyanide.
Carbon oxides and Nitrogen oxides
- **Advice for Firefighters**
If employees are expected to fight fires, they must be trained and equipped as stated in the OSHA fire brigades standard (29 CFR 1910.156).
As with any fire, wear positive-pressure self-contained breathing apparatus and full protective gear that are NIOSH approved.
- **Additional Information** Ensure adequate and functional fire fighting facilities equipped in working area at all times.

6 Accidental release measures

- **Personal Precautions**
Do not breathe gas, vapors, dusts or mists if their inhalable particles occur during use.
Ensure personnel take precautions for their personal protection during clean up; see Section 8 for the specific requirements.
- **Environmental Precautions** No further relevant information.
- **Cleaning Up Methods**
Ensure adequate ventilation.
Eliminate all ignition sources.
Keep unauthorized personnel away.
Allow molten product to cool.
Absorb residues with liquid-binding materials.
Ventilate and wash area after clean-up is complete.
Collect spills in suitable and properly labeled containers.
Do not use solvents unless following safe handling practices and within the recommended exposure guidelines.
Dispose contaminated chemicals as waste according to Section 13.
- **Additional Information**
Recommended decontamination solution: 8-10% sodium carbonate and 2% liquid soap in water or liquid/yellow soap (potassium soap with ~15% anionic dense): 20ml;water:700ml;polyethyleneglycol (PEG 400): 350ml.

7 Handling and storage

- **Handling**
 - **Precautions for Safe Handling**
Ensure good ventilation and/or exhaustion at workplace.
Keep away from incompatible material(s).
Avoid any release into the environment.
Keep container tightly closed when not in use if product is volatile so as to generate hazardous atmosphere.
For industrial or professional use only
Observe all the personal protection requirements in Section 8.
 - **Information about Protection Against Explosions and Fires**
Will not burn unless preheated.
Keep away from heat, sparks, open flame and other ignition sources during handling.
Be prepared with respirators.
- **Storage**
 - **Requirements to be Met by Storerooms and Receptacles**
Store in a well-ventilated place; provide ventilation for receptacles.
Keep stored in accordance with local, regional, national, and international regulations.
 - **Information about Storage in One Common Storage Facility**
Store between 32F and 110F.
Store away from incompatible material(s).
Store away from foodstuffs.
Avoid release to the environment.
- **Additional Information** No further relevant information.

8 Exposure controls/personal protection

- **Engineering Measures or Controls**
 - **Exposure Limit Values that Require Monitoring at the Workplace**
P-MDI OSHA PEL: CLV 0.02 ppm 0.2mg/m3 and Diphenylmethane-4,4'-diisocyanate (MDI) OSHA PEL CLV 0.02ppm 0.2 mg/m3.
- **Additional Information for the Limit Values**
As a SUSPECTED CARCINOGEN, there may be NO safe level of exposure; reduce all contact to the lowest possible level.
- **Other Engineering Measures or Controls**
Ventilation rates should be matched to conditions.
If applicable, use process enclosure(s), local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

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- **Personal Protective**

- **General Protective and Hygienic Measures**

Avoid any contact with eye.
Do not eat, drink or smoke during work.
Clean hands and exposed skin thoroughly after work and before breaks.

- **Personal Protective Equipment (PPE)**

- **Breathing Equipment**

Sufficient ventilation in pattern and volume should be provided in order to maintain air contaminant levels below recommended exposure limits.

Use a NIOSH approved air-purifying organic vapor respirator if occupational limits are exceeded. For emergency situations, confined space use, or other conditions where exposure limits may be greatly exceeded, use an approved air supplied respirator. Observe OSHA regulations (29CFR 1910.134) for respirator use.

- **Hand Protection**

Selection of glove material should take into consideration the penetration times, rates of diffusion, and the degradation.

Suggested glove type(s):

Nitrile Gloves
Butyl Rubber Gloves

- **Eye Protection**

safety glasses with side shields and or face shield.
tightly sealed goggles and face shields if the potential for splashing occurs.

- **Body Protection** Impermeable protective clothing.

- **Additional Information**

All protective clothing (suits, gloves, footwear, headgear) should be clean, available every day, and put on before work. The Engineering measures or controls, and PPE recommendations are only guidelines and may not apply to every situation. For additional information, please consult the corresponding requirements under OSHA 29 CFR 1910.94-95, and 29 CFR 1910.132-138.

9 Physical and chemical properties

- **Information on Basic Physical and Chemical Properties**

- **Appearance:**

· **Form:** Liquid
· **Color:** Dark amber
· **Odor:** Aromatic
· **Odor Threshold:** Not determined.

- **PH-Value:** Not determined.

- **Change in Condition:**

· **Melting Point:** 3 °C (37 °F)
· **Boiling Point:** Not determined.
· **Flash Point:** >250 °C (>482 °F)

- **Decomposition Temperature:** Not determined.

- **Flammability:** Not determined.

- **Explosion:** Not determined.

- **Explosion Limits:**
- **Lower:** Not determined.
- **Upper:** Not determined.

- **Vapor Pressure at 20 °C (68 °F):** 0.00016 mm Hg

- **Vapor Density:** not determined

- **Density at 20 °C (68 °F):** 1.24 g/cm³ (10.348 lbs/gal)

- **Solubility in or Miscibility with**
- **Water:** Insoluble; may react with water.

- **Viscosity:**
- **Dynamic:** Not determined.
- **Kinematic:** Not determined.

- **Additional Information** No further relevant information.

10 Stability and reactivity

- **Physical Hazard(s)** Not a regulated reactive or physical hazard under GHS.

- **Thermal Decomposition and Conditions to be Avoided**

Keep away from incompatible material(s).
moisture
Thermally decomposes during fire or high heat; keep away from heat, sparks, open flame and other ignition sources.

- **Possibility of Other Hazardous Reaction(s)**

May slowly react with water and release carbon dioxide (CO₂).
Exothermic reaction with amines and alcohols; reacts with water forming CO₂; in closed containers, risk of bursting owing to increase of pressure.
May polymerize in contact with water or moisture.

- **Incompatible Material(s)**

Water
Strong bases
Alcohols

- **Hazardous Decomposition Product(s)**

Thermally decomposes during fire or very high heat. See Section 5 for fire hazards evolved during thermal decomposition.

- **Hazardous Polymerization Product(s)** Polyureas

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· **Additional Information** No further relevant information.

11 Toxicological information

· Acute Toxicity

· Oral

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane

Oral LD50 (Read-across from CAS 101-68-8)
2200 mg/kg (LD50; mouse)
Reference: ChemID Full Record (2011).

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

Oral LD50 2200 mg/kg (mouse)
Reference: ChemID Full Record (2011).

26447-40-5 Methylene diphenyl diisocyanate

Oral LD50 (Read-across from CAS 101-68-8)
2200 mg/kg (LD50; mouse)
Reference: ChemID Full Record (2011).

· **Potential Health Effect(s):** See acute inhalative effect(s) for further information

· Dermal

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane

Dermal LD50 (Read-across from CAS 101-68-8)
LD50 > 9400 mg/kg (rabbit) (OECD TG 402)
Reference: ECHA (2011).

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

Dermal LD50 > 9400 mg/kg (rabbit) (OECD TG 402)
Reference: ECHA (2011).

26447-40-5 Methylene diphenyl diisocyanate

Dermal LD50 (Read-across from CAS 101-68-8)
LD50 > 9400 mg/kg (rabbit) (OECD TG 402)
Reference: ECHA (2011).

· **Potential Health Effect(s):**
Not a classified acute dermal hazard.
See acute inhalative effect(s) for further information.

· Inhalative

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane

Inhalative LC50/4 h 1.5 mg/l (Test species: n/a)
ATE Mix (inhal): 1.5 mg/l 4h for dust/mist test atmosphere, calculation method. The substance was tested in a different form than what is placed on the market and because of that a modified classification for acute inhalation toxicity is justified. Reference: Vendor SDS

0.39 mg/l (rat) (as dust; test detail not available)

The substance was classified as a fatal inhalative hazard (Category 2: dusts) by GHS-J, and a serious hazard (Health: 3) by HMIS. Due to the wetted form, inhalative effects of the substance can be seen as negligible.
Reference: GHS-J (2006) and OECD SIAM (2003) and HMIS (2001).

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

Inhalative LC50/4 h (rat) (Toxicity not expected due to wetted form)
LC50/4 hrs = 0.39 mg/l (dust form): The substance was classified as a fatal inhalative hazard (Category 2: dusts) by GHS-J, and a serious hazard (Health: 3) by HMIS. Due to the wetted form, inhalative effects of the substance can be seen as negligible.
Reference: GHS-J (2006) and OECD SIAM (2003) and HMIS (2001).

26447-40-5 Methylene diphenyl diisocyanate

Inhalative LC50/4 h (Read-across from CAS 101-68-8)
0.39 mg/l (rat) (as dust; test detail not available)
The substance was classified as a fatal inhalative hazard (Category 2: dusts) by GHS-J, and a serious hazard (Health: 3) by HMIS. Due to the wetted form, inhalative effects of the substance can be seen as negligible.
Reference: GHS-J (2006) and OECD SIAM (2003) and HMIS (2001).

· **Potential Health Effect(s):**
While not a classified acute inhalative hazard due to wetted form, the product may cause the following symptoms when heated, sprayed, or aerosolized:
lung damage
asthma
headache, nausea, shortness of breath, sore throat

· Skin Corrosion or Irritation

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane

Corrosion/Irritation (Read-across from CAS 101-68-8)
(rabbit) (OECD TG 404; post-exposure: 14 days)
erythema: 2.03/4 (max. 4); not fully reversible within 14 days;
edema: 1.43/4 (max. 4); not fully reversible within 14 days.
The substance was classified as irritating to rabbit skin.
Reference: ECHA (2011).

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

Corrosion/Irritation irritating (rabbit) (OECD TG 404; post-exposure: 14 days)
erythema: 2.03/4 (max. 4); not fully reversible within 14 days;
edema: 1.43/4 (max. 4); not fully reversible within 14 days.
The substance was classified as irritating to rabbit skin.
Reference: ECHA (2011).

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26447-40-5 Methylene diphenyl diisocyanate

Corrosion/Irritation (Read-across from CAS 101-68-8)
 (rabbit) (OECD TG 404; post-exposure: 14 days)
 erythema: 2.03/4 (max. 4); not fully reversible within 14 days;
 edema: 1.43/4 (max. 4); not fully reversible within 14 days.
 The substance was classified as irritating to rabbit skin.
 Reference: ECHA (2011).

Potential Health Effect(s):

Causes skin irritation.
 In contact with skin, may cause:
 skin rash
 redness and pain

Eye Serious Damage or Irritation**9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane**

Damage/Irritation (Read-across from CAS 101-68-8)
 (rabbit) (post-exposure: 8 days)
 cornea and iris : 0.05/4 (Max. 4; 30 seconds contact); fully reversible in 48 hours;
 conjunctivae: (0.61 or 0.78)/3 (Max. 3; 30 seconds contact); not fully reversible in 8 days;
 chemosis: (0.56 or 0.61)/4 (Max. 4; 30 seconds contact); not fully reversible in 8 days.
 The substance was therefore classified to be an eye irritant (Category 2A).
 Reference: ECHA (2011).

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

Damage/Irritation irritating (rabbit) (30sec-contact; post-exposure: 8 days)
 cornea and iris : 0.05/4 (Max. 4; 30 seconds contact); fully reversible in 48 hours;
 conjunctivae: (0.61 or 0.78)/3 (Max. 3; 30 seconds contact); not fully reversible in 8 days;
 chemosis: (0.56 or 0.61)/4 (Max. 4; 30 seconds contact); not fully reversible in 8 days.
 The substance was therefore classified to be an eye irritant (Category 2A).
 Reference: ECHA (2011).

26447-40-5 Methylene diphenyl diisocyanate

Damage/Irritation (Read-across from CAS 101-68-8)
 (rabbit) (post-exposure: 8 days)
 cornea and iris : 0.05/4 (Max. 4; 30 seconds contact); fully reversible in 48 hours;
 conjunctivae: (0.61 or 0.78)/3 (Max. 3; 30 seconds contact); not fully reversible in 8 days;
 chemosis: (0.56 or 0.61)/4 (Max. 4; 30 seconds contact); not fully reversible in 8 days.
 The substance was therefore classified to be an eye irritant (Category 2A).
 Reference: ECHA (2011).

Potential Health Effect(s):

Causes serious eye irritation.
 In contact with eye, may cause:
 tear production
 redness and pain

Respiratory or Skin Sensitization**9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane**

Sensitization	Skin	(Read-across from CAS 101-68-8) (guinea pig) (OECD TG 406) - No positive reaction was observed. (human) - there were skin sensitization results reported in human victims caused by the substance. For safety reason, the substance was classified as a skin sensitizer. Reference: ECHA (2011) and OECD SIAM (2003).
	Respiratory	(Read-across from CAS 101-68-8) sensitizing (guinea pig) (intradermal injection and topical application) An antibody response in respiratory system and a pulmonary hypersensitivity were observed in some of the treated humans. Due to wetted form of the substance, inhalative effects can be seen as negligible. Reference: ECHA (2011).

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

Sensitization	Skin	sensitizing (Human) (skin sensitization reported in human victims) negative (guinea pig)(OECD TG 406) - No positive reaction was observed. For safety reason, the substance was classified as a skin sensitizer. Reference: ECHA (2011) and OECD SIAM (2003).
	Respiratory	(Human) (Not anticipated due to wetted form) An antibody response in respiratory system and a pulmonary hypersensitivity were observed in some of the treated humans. However, due to the wetted form, inhalative effects of the substance can be seen as negligible. Reference: ECHA (2011).

26447-40-5 Methylene diphenyl diisocyanate

Sensitization	Skin	(Read-across from CAS 101-68-8) (guinea pig) (OECD TG 406) - No positive reaction was observed. (human) - there were skin sensitization results reported in human victims caused by the substance. For safety reason, the substance was classified as a skin sensitizer. Reference: ECHA (2011) and OECD SIAM (2003).
	Respiratory	(Read-across from CAS 101-68-8) sensitizing (guinea pig) (intradermal injection and topical application) An antibody response in respiratory system and a pulmonary hypersensitivity were observed in some of the treated humans. Due to wetted form of the substance, inhalative effects can be seen as negligible. Reference: ECHA (2011).

Potential Health Effect(s):

May cause an allergic skin reaction.
 Not a known respiratory sensitizer.
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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· Germ Cell Mutagenicity

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane

Mutagenicity (Read-across from CAS 101-68-8)
 In Vitro (AMES tests; *Salmonella typhimurium*) - negative with and without metabolic activation
 In Vitro (AMES tests; *Escherichia coli*) - negative without metabolic activation
 Reference: CCRIS (2011).

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

Mutagenicity negative (*salmonella typhimurium*) (In Vitro (AMES tests))
 In Vitro (*Escherichia coli*) - negative with and without metabolic activation
 Reference: CCRIS (2011).

26447-40-5 Methylene diphenyl diisocyanate

Mutagenicity (Read-across from CAS 101-68-8)
 In Vitro (AMES tests; *Salmonella typhimurium*) - negative with and without metabolic activation
 In Vitro (AMES tests; *Escherichia coli*) - negative without metabolic activation
 Reference: CCRIS (2011).

· **Potential Health Effect(s):** Not a known Germ Cell Mutagen.

· Carcinogenicity

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane

Carcinogenicity (Read-across from CAS 101-68-8)
 (rat) - After repeated inhalation with 6.0 mg/m³ of the polymeric MDI for 2 years, some occurrences of pulmonary tumors (6 adenomas and 1 adenocarcinoma in males, and 2 adenomas in females) were reported. However, due to wetted form of the substance, inhalative effects can be seen as negligible.
 (Test species: N/a) - The substance was not listed as a carcinogen by OSHA, ACGIH, NTP or IARC. When considering all of the evidence, the substance was considered to be of unlikely relevance of carcinogenicity to humans.
 Reference: ECHA (2011).

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

Carcinogenicity negative (rat) (not listed as a Carcinogen by NTP, IARC or OSHA)
 (rat) - After repeated inhalation with 6.0 mg/m³ of polymeric MDI for 2 years, some occurrences of pulmonary tumors (6 adenomas and 1 adenocarcinoma in males, and 2 adenomas in females) were reported. However, due to the wetted form, inhalative effects of the substance can be seen as negligible
 (Test species: N/a)
 The substance was not listed as a carcinogen by OSHA, ACGIH, NTP or IARC.
 Reference: ECHA (2011).

26447-40-5 Methylene diphenyl diisocyanate

Carcinogenicity (rat)
 rat, Male/Female, inhalation, 2 Years, 6 hrs/day 5 days/week,
 Polymeric MDI has been classified as IARC Group 3 ("Not classifiable as to its carcinogenicity to humans") (1999) indicating there is inadequate evidence available to describe the carcinogenic potential. Epidemiological studies found no association between isocyanates and cancer. In chronic exposure studies in rodents, pMDI produced tumors only at the highest exposure level of 6 mg/m³. This exposure level is significantly above the TLV for MDI (0.051 mg/m³). Based on the weight of the evidence, a determination of not classified for carcinogenicity is justified.

· **Potential Health Effect(s):** Suspected of causing cancer.

· Reproductive Toxicity

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane

Reproductive Toxi. (No data available)

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

Reproductive Toxi. (No data available)

26447-40-5 Methylene diphenyl diisocyanate

Reproductive Toxi. (No data available)

· **Potential Health Effect(s):** No relevant information; classification is not possible.

· Specific Target Organ Toxicity - Single Exposure

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane

STOT-Single (Read-across from CAS 101-68-8)
 (Test species: human)
 Target organs: None
 There were human case reports that the substance induced respiratory irritation. Due to wetted form of the substance, inhalative effects can be seen as negligible.
 Reference: GHS-J (2006) and OECD SIAM (2003).

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

STOT-Single Target: None (Human) (Systemic effects not anticipated as a wetted form)
 There were human case reports that the substance induced respiratory irritation after short-term exposure to the substance. However, due to the wetted form, inhalative effects of the substance can be seen as negligible.
 Reference: GHS-J (2006) and OECD SIAM (2003).

26447-40-5 Methylene diphenyl diisocyanate

STOT-Single (Read-across from CAS 101-68-8)
 (Test species: human)
 Target organs: None
 There were human case reports that the substance induced respiratory irritation. Due to wetted form of the substance, inhalative effects can be seen as negligible.
 Reference: GHS-J (2006) and OECD SIAM (2003).

· **Potential Health Effect(s):**
 May cause respiratory irritation.
 Not a known hazard to organs upon single exposure.

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Specific Target Organ Toxicity - Repeated Exposure

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane

STOT-Repeated (Read-across from CAS 101-68-8)

Target organs: None

Human cases showed effects including restrictions of pulmonary function, a decline in pulmonary diffusing capacity, asthma, hypersensitivity pneumonitis, pleuritis, and progressive fibrosing alveolitis after chronic exposure to even low concentration levels of the substance. However, due to wetted form of the substance, inhalative effects can be seen as negligible.

Reference: ECHA (2011) and OECD SIAM (2003).

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

STOT-Repeated Target: None (Human) (Systemic effects not anticipated as a wetted form)

Human - Human cases showed effects including restrictions of pulmonary function, a decline in pulmonary diffusing capacity, asthma, hypersensitivity pneumonitis, pleuritis, and progressive fibrosing alveolitis after chronic exposure to even low concentration levels of the substance. However, due to wetted form of the substance, inhalative effects can be seen as negligible.

Reference: OECD SIAM (2003) and ECHA (2011).

26447-40-5 Methylene diphenyl diisocyanate

STOT-Repeated (Read-across from CAS 101-68-8)

Target organs: None

Human cases showed effects including restrictions of pulmonary function, a decline in pulmonary diffusing capacity, asthma, hypersensitivity pneumonitis, pleuritis, and progressive fibrosing alveolitis after chronic exposure to even low concentration levels of the substance. However, due to wetted form of the substance, inhalative effects can be seen as negligible.

Reference: ECHA (2011) and OECD SIAM (2003).

Potential Health Effect(s):

May cause damage to organs through prolonged or repeated exposure.
Not a known hazard to organs upon repeated exposure.

Aspiration Hazard

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane

Aspiration Hazard (No data available)

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

Aspiration Hazard (No data available)

26447-40-5 Methylene diphenyl diisocyanate

Aspiration Hazard (No data available)

Potential Health Effect(s): No relevant information; classification is not possible.

Additional Information No further relevant information.

12 Ecological information

Aquatic Environmental Toxicity

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane

Algae Toxicity

(Read-across from CAS 101-68-8)
EC50 (3 days) > 1640 mg/l (Scenedesmus subspicatus; OECD TG 201)

Crustacean Toxicity

(Read-across from CAS 101-68-8)
> 1000 mg/l (daphnia magna (water flea)) (EC50 (24 hrs), OECD TG 202)

Fish Toxicity

(Read-across from CAS 101-68-8)
> 3000 mg/l (Oryzias latipes (Rice fish)) (LC0 (96 hrs), OECD TG 203)
The substance is therefore not classified as hazardous to aquatic organisms based on the classification criteria.
Reference: ECHA (2011).

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

Algae Toxicity

> 1640 mg/l (Scenedesmus subspicatus) (EC50 (3 days), OECD TG 201)

Crustacean Toxicity

> 1000 mg/l (Daphnia magna (water flea)) (EC50 (24 hrs), OECD TG 202)

Fish Toxicity

> 3000 mg/l (Oryzias latipes (Rice fish)) (LC0 (96 hrs), OECD TG 203)
The substance is therefore not classified as hazardous to aquatic organisms based on the classification criteria.
Reference: ECHA (2011).

26447-40-5 Methylene diphenyl diisocyanate

Algae Toxicity

(Read-across from CAS 101-68-8)
EC50 (3 days) > 1640 mg/l (Scenedesmus subspicatus; OECD TG 201)

Crustacean Toxicity

(Read-across from CAS 101-68-8)
> 1000 mg/l (daphnia magna (water flea)) (EC50 (24 hrs), OECD TG 202)

Fish Toxicity

(Read-across from CAS 101-68-8)
> 3000 mg/l (Oryzias latipes (Rice fish)) (LC0 (96 hrs), OECD TG 203)
The substance is therefore not classified as hazardous to aquatic organisms based on the classification criteria.
Reference: ECHA (2011).

Aquatic Environmental Toxicity Assessment: Not a known Environmental hazard to aquatic life.

Degradability and Stability

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane

Biodegradation

(Read-across from CAS 101-68-8)
non-biodegrad. (Test species: n/a) (OECD TG 301; 4 weeks; 100 mg/L of the substance)

Persistence

(Read-across from CAS 101-68-8)
The substance is not persistent.

Photodegradation

(Read-across from CAS 101-68-8)
1.16E-11 cm²/molecule·sec (OH radical)
Half-life = 0.92 day; however, photolysis in water is negligible.
Reference: CHRIP (2011), Canada DSL (2007), and ECHA (2011).

Stability in water

(No data available)

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101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

Biodegradation	non-biodegrad. (Test species: n/a) (OECD TG 301; 4 weeks; 100 mg/L of the substance) Reference: CHRIP (2011).
Persistence	(Test species: n/a) (The substance is not persistent) Reference: Canada DSL (2007).
Photodegradation	1.16E-11 cm ³ /molecule·sec (OH radical) Half-life = 0.92 day; however, photolysis in water is negligible. Reference: ECHA (2011).
Stability in water	(No data available)

26447-40-5 Methylene diphenyl diisocyanate

Biodegradation	(Read-across from CAS 101-68-8) non-biodegrad. (Test species: n/a) (OECD TG 301; 4 weeks; 100 mg/L of the substance)
Persistence	(Read-across from CAS 101-68-8) The substance is not persistent.
Photodegradation	(Read-across from CAS 101-68-8) 1.16E-11 cm ³ /molecule·sec (OH radical) Half-life = 0.92 day; however, photolysis in water is negligible. Reference: CHRIP (2011), Canada DSL (2007), and ECHA (2011).
Stability in water	(No data available)

Bioaccumulation and Distribution**9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane**

LogPow	(Read-across from CAS 101-68-8) 4.51 (Test species: n/a) (OECD TG 117) Reference: ECHA (2011).
BCF	(Read-across from CAS 101-68-8) 92 (Cyprinus carpio) (Chemical concentration: 0.8 µg/L; 28 days) 200 (Chemical concentration: 0.08 µg/L; 28 days) It is not or low bioaccumulative in aquatic environment. Reference: CHRIP (2011).
Koc	(No data available)

101-68-8 4,4'-diisocyanatodiphenylmethane (Wetted form)

LogPow	4.51 (Test species: n/a) (OECD TG 117) Reference: ECHA (2011).
BCF	92-200 (Cyprinus carpio) (It is not or low bioaccumulative) 92 (Chemical concentration: 0.8 µg/L; 28 days) 200 (Chemical concentration: 0.08 µg/L; 28 days) It is not bioaccumulative in aquatic environment. Reference: CHRIP (2011).
Koc	(No data available)

26447-40-5 Methylene diphenyl diisocyanate

LogPow	(Read-across from CAS 101-68-8) 4.51 (Test species: n/a) (OECD TG 117) Reference: ECHA (2011).
BCF	(Read-across from CAS 101-68-8) 92 (Cyprinus carpio) (Chemical concentration: 0.8 µg/L; 28 days) 200 (Chemical concentration: 0.08 µg/L; 28 days) It is not or low bioaccumulative in aquatic environment. Reference: CHRIP (2011).
Koc	(No data available)

· **Degradability and Bioaccumulation Assessment:** Non-rapidly degradable, and low bioaccumulative.

· **Additional Information** No further relevant information.

13 Disposal considerations

· **Hazardous Waste List**

· **Description:** It may be necessary to contain and dispose of the substance/mixture as a hazardous waste.

· **Waste Treatment Recommendation:**

Generation of waste should be avoided or minimized wherever possible.

Chemical waste, even small quantities, is neither allowed to be poured down drains, sewage system or waterways; nor disposed with household garbage.

Dispose of contents/containers in accordance with local, regional, national, and international regulations.

· **Unused and Uncontaminated Packagings**

· **Recommendation** Dispose of according to your local waste 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

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· Packing group	Not Regulated
· DOT, ADR, IMDG, IATA	
· Environmental Hazards:	Not applicable.
· Special Precautions:	Not applicable.
· Transport in Bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional Information:	Single containers less than 5,000 pounds are not regulated.
· UN "Model Regulation":	Not Regulated

15 Regulatory information

· **USA Regulation Lists**
 · **SARA (Superfund Amendments and Reauthorization Act of 1986)**

· **Section 302 (Extremely Hazardous Substances)**

None of the ingredients is listed.

· **Section 313 (Toxics Release Inventory (TRI) reporting)**

9016-87-9	Polymer of 4,4'-diisocyanatodiphenylmethane	40-50%
101-68-8	4,4'-diisocyanatodiphenylmethane (Wetted form)	30-40%

· **Section 311/312 (Hazardous Chemical Inventory Reporting)**

101-68-8	4,4'-diisocyanatodiphenylmethane (Wetted form)	A, C	30-40%
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· **Hazard Abbreviations for SARA 311/312**

A - Acute Health Hazard
 C - Chronic Health Hazard
 F - Fire Hazard
 R - Reactive Hazard
 S - Sudden Release of Pressure Hazard

· **TSCA (Toxic Substances Control Act)**

9016-87-9	Polymer of 4,4'-diisocyanatodiphenylmethane
26447-40-5	Methylene diphenyl diisocyanate

· **Proposition 65**

· **Chemicals Known to Cause Cancer**

None of the ingredients is listed.

· **Chemicals Known to Cause Reproductive Toxicity for Females**

None of the ingredients is listed.

· **Chemicals Known to Cause Reproductive Toxicity for Males**

None of the ingredients is listed.

· **Chemicals Known to Cause Developmental Toxicity**

None of the ingredients is listed.

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**

9016-87-9	Polymer of 4,4'-diisocyanatodiphenylmethane	CBD
101-68-8	4,4'-diisocyanatodiphenylmethane (Wetted form)	CBD

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

9016-87-9	Polymer of 4,4'-diisocyanatodiphenylmethane	3
101-68-8	4,4'-diisocyanatodiphenylmethane (Wetted form)	3

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value Established by ACGIH)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **International Regulation Lists**

· **Canadian Domestic Substance Listings:**

All ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

101-68-8 | 4,4'-diisocyanatodiphenylmethane (Wetted form)

· **Canadian Ingredient Disclosure list (limit 1%)**

None of the ingredients is listed.

· **Chinese Chemical Inventory of Existing Chemical Substances:**

All ingredients are listed.

· **Japanese Existing and New Chemical Substance List:**

All ingredients are listed.

· **Korean Existing Chemical Inventory:**

All ingredients are listed.

· **European Pre-registered substances:**

All ingredients are listed.

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· **REACH - Substances of Very High Concern (SVHC) List:**

None of the ingredients is listed.

· **Restriction of Hazardous Substances Directive (RoHS) list:**

None of the ingredients is listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department Issuing (M)SDS:** Product Safety Department
- **Contact:** msds@resinlab.com

· **Abbreviations and acronyms:**

- ACGIH: American Conference of Governmental Industrial Hygienists
- ACToR: US EPA Aggregated Computational Toxicology Resource
- ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road
- BCF: Bioconcentration Factor
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- CCRIS: US NLM TOXNET Chemical Carcinogenesis Research Information System
- ChemID (Full Record): US NLM Chemical Information Database (or its Full Record) designed to help search for information by chemical name or structure
- CHRIP: Japan NITE Information on Biodegradation and Bioconcentration of the Existing Chemical Substances in the Chemical Risk Information Platform
- DOT: US Department of Transportation
- DSL: Canada Domestic Substance List
- ECHA: European Chemicals Agency's Dissemination portal with information on chemical substances registered under REACH
- ESIS: European Chemical Substances Information System
- HMIS: US National Paint & Coatings Association (NPCA) Hazardous Materials Identification System
- HSDB: US NLM TOXNET Hazardous Substances Databank
- HSNO CCID: New Zealand Hazardous Substances and New Organisms Chemical Classification Information Database
- IARC: International Agency for Research on Cancer developed by United Nations World Health Organisation (WHO)
- IATA-DGR: Dangerous Goods Regulations (DGR) by the International Air Transport Association (IATA)
- ICAO-TI: Technical Instructions (TI) by the International Civil Aviation Organization (ICAO)
- ICSC: International Chemical Safety Cards
- IMDG: International Maritime Dangerous Goods; the principal international rules for International Carriage of Dangerous Goods by SEA under the Recommendations on the Transport of Dangerous Goods by United Nations (RTDG)
- IUCLID: EU REACH International Uniform Chemical Information Database
- Koc: Partition coefficient, soil Organic Carbon to water
- LC50/LD50: Lethal Concentration/Dose, 50 percent
- N/a: Not available or Not applicable
- NFPA: US National Fire Protection Association
- NIOSH: US National Institute of Occupational Safety and Health
- NITE: National Institute of Technology and Evaluation, Japan
- NLM TOXNET: US National Library of Medicine Toxicology Data Network
- OECD: Organisation for Economic Co-operation and Development
- OSHA: US Occupational Safety and Health Administration
- P: Marine Pollutant
- RCRA: Resource Conservation and Recovery Act (USA)
- REACH: EU Registry, Evaluation and Authorisation of Chemicals
- RID: the Regulations Concerning the International Carriage of Dangerous Goods by Rail; published by the Central Office for International Carriage by Rail (OTIF)
- RTDG: the Recommendations on the Transport of Dangerous Goods by United Nations (UN)
- RTECS: US Registry of Toxic Effects of Chemical Substances
- SARA: US Superfund Amendments and Reauthorization Act
- SIDS: OECD existing chemicals Screening Information Data Sets
- SVHC: EU ECHA Substance of Very High Concern
- TEEL: Temporary Emergency Exposure Limit developed by US Subcommittee on Consequence Assessment and Protective Actions (SCAPA) of US Department of Energy (DOE)
- TOXLINE: US NLM bibliographic database search system
- TSCA: US Toxic Substance Control Act
- **Date of preparation / last revision** 07/14/2016 / 12

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