Safety Data Sheet
acc. to OSHA HCS

Print Date 09/21/2016 Revision Date 09/21/2016

· **Product Identifier**
· **Trade Name: UR6001 Black 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
1-877-259-1669
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.
STOT SE 3	H335	May cause respiratory irritation.

· **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
· **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.
H335 May cause respiratory irritation.

· **Precautionary statements**
[In case of inadequate ventilation] wear respiratory protection.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves / eye protection / face protection.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
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.
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

· **HMIS System**
· **HMIS Ratings (scale 0 - 4)**

Health = *2
Fire = 1
Reactivity = 1

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 1)

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical Characterization: Mixtures**

· **Composition/Information on Ingredients**

CAS: 13674-84-5	tris(2-chlorisopropyl)-phosphate Acute Tox. 4, H302; Acute Tox. 4, H312 Aquatic Acute 3, H402; Aquatic Chronic 3, H412	40-50%
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. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	30-40%
CAS: 101-68-8 EINECS: 202-966-0 Index Number: 615-005-00-9 RTECS: NQ 9350000	4,4'-diisocyanatodiphenylmethane Resp. Sens. 1, H334; STOT RE 2, H373 Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	10-20%

· **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**
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.
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After Skin Contact**
Gently wash contaminated skin with water.
Remove all contaminated clothing and wash before reuse.
An MDI study has demonstrated that a polyglycol-based skin cleanser (such as D-Tam TM, PEG-400) or corn oil may be more effective than soap and water.
clean shoes thoroughly before use if contaminated.
Seek medical treatment in case of complaints.
· **After Eye Contact**
Rinse opened eyes under running water for at least 15 minutes.
Remove contact lenses if present and easy to do so; continue rinsing.
Seek medical advice.
· **After Swallowing**
If victim is unconscious; never give anything by mouth.
If victim is conscious, rinse out mouth with water.
Seek medical treatment in case of complaints.
· **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 (CO_2).
Water spray or water fog.
· **Unsuitable Extinguishing Agent(s)** No relevant information.
· **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.
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**
Will not burn unless preheated.
In case of fire, following can be released:
hydrogen chloride

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 2)

Carbon dioxide (CO_2) and Carbon monoxide (CO)
Hydrogen cyanide (HCN)
Nitrogen oxides
Phosphorus 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.
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**
Neutralization solutions:
1. Colorimetric Laboratories Inc. (CLI) decontamination solution.
2. A mixture of 75% water, 20% non-ionic surfactant (e.g. Poly-tergent SL-62, Tergitoal TMN-10) and 5% n-propanol.
3. A mixture of 80% water, 20% non-ionic surfactant (e.g. Poly-tergent SL-62, Tergitoal TMN-10).
4. A mixture of 90% water, 3-8% ammonium hydroxide or concentrated ammonia, and 2% liquid detergent.
Use of Neutralization solution: Apply and allow deactivation material to stand for at least 30 minutes before shoveling into drums. Do not tighten the bungs.

7 Handling and storage

· **Handling**
· **Precautions for Safe Handling**
Keep away from incompatible material(s).
Avoid any release into the environment.
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.

· **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 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**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

101-68-8 4,4'-diisocyanatodiphenylmethane	
PEL	Ceiling limit value: 0.2 mg/m³, 0.02 ppm
REL	Long-term value: 0.05 mg/m³, 0.005 ppm Ceiling limit value: 0.2* mg/m³, 0.02* ppm *10-min
TLV	Long-term value: 0.051 mg/m³, 0.005 ppm

· **Other Engineering Measures or Controls**
Diisocyanate vapors can only be smelled when the level exceeds the exposure limit.
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.

· **Personal Protective**
· **General Protective and Hygienic Measures**
Do not eat, drink or smoke during work.
Clean hands and exposed skin thoroughly after work and before breaks.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 3)

· **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.
wear tightly sealed safety goggles if there is potential for splashing.
· **Body Protection**
heavy cotton or Tyvek coveralls.
No relevant information.

· **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:** Colorless
· **Odor:** Characteristic
· **Odor Threshold:** Not determined.

· **PH-Value:** Not determined.

· **Change in Condition:**
· **Melting Point:** Not determined.
· **Boiling Point:** >300 °C (>572 °F)
· **Flash Point:** >150 °C (>302 °F)
· **Decomposition Temperature:** Not determined.
· **Flammability:** Not determined.
· **Explosion:** Not determined.
· **Explosion Limits:**
· **Lower:** Not determined.
· **Upper:** Not determined.

· **Vapor Pressure:** Not determined.
· **Vapor Density:** not determined
· **Density at 20 °C (68 °F):** 1.25 g/cm³ (10.431 lbs/gal)
· **Solubility in or Miscibility with**
· **Water:** Not miscible or difficult to mix.
· **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.
· **Hazardous Reactivity and Chemical Stability**
May polymerize when heated.
May decompose, condense, or self-react under conditions of high temperature and/or pressure; but there is little or no potential for heat generation or explosion, or readily undergo hazardous polymerization in the absence of inhibitors.
· **Thermal Decomposition and Conditions to be Avoided**
Keep away from incompatible material(s).
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 (CO_2).
May polymerize in contact with water or moisture.
· **Incompatible Material(s)**
Amines.
Alcohols
Water
Bases (Alkalis)
trimethylolpropane
Acids
Strong oxidizing agent
· **Hazardous Decomposition Product(s)**
Thermally decomposes during fire or very high heat. See Section 5 for fire hazards evolved during thermal decomposition.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 4)

· **Hazardous Polymerization Product(s)** Polyureas
· **Additional Information** No further relevant information.

11 Toxicological information

· **Acute Toxicity**

· **Oral**		
13674-84-5 tris(2-chlorisopropyl)-phosphate		
Oral	LD50	<2000 mg/kg (rat)
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		
Oral	LD50	2200 mg/kg (mouse) Reference: ChemID Full Record (2011).

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

· **Dermal**		
13674-84-5 tris(2-chlorisopropyl)-phosphate		
Dermal	LD50	<2000 mg/kg (rat)
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		
Dermal	LD50	> 9400 mg/kg (rabbit) (OECD TG 402) Reference: ECHA (2011).

· **Potential Health Effect(s):**
No further relevant information available; classification is not possible.
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		
Inhalative	LC50/4 h	0.39 mg/l (rat) (no test detail available) The substance was rated as a serious hazard (health rating: 3) via inhalation by HMIS. Meanwhile, the substance was classified as a fatal inhalative hazard (Category 2) by GHS-J. We adopted the classification from GHS-J as a fatal hazard (Category 2) based on the classification criteria. Reference: GHS-J (2006) and OECD SIAM (2003) and HMIS (2001).

· **Potential Health Effect(s):**
While not possible to classify the acute inhalative hazard due to missing data, the product may cause the following symptom(s):
headache
lung damage
nausea
shortness of breath
sore throat
dyspnea
asthma

· **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	
Corrosion/Irritation	(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):**
skin rash
No further relevant information; classification is not possible.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Print Date 09/21/2016 Revision Date 09/21/2016

Trade Name: UR6001 Black B

(Contd. of page 5)

· **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

Damage/Irritation	(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 a eye irritant (Category 2A). Reference: ECHA (2011).

· **Potential Health Effect(s):** tear production

· **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

Sensitization	Skin	(guinea pig) (OECD TG 406) No positive reaction was observed. (human) There were skin sensitization results reported in human victims that caused by the substance. For safety reason, the substance was classified as a skin sensitizer. Reference: ECHA (2011) and OECD SIAM (2003).
	Respiratory	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. For safety reason, the substance was classified as a respiratory sensitizer. Reference: ECHA (2011).

· **Potential Health Effect(s):**
Repeated skin contact may cause dermatitis, skin rash or itchiness.
No relevant information for respiratory sensitization; classification is not possible.
May cause asthma attacks with shortness of breath, wheezing, cough, and/or chest tightness.

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

None of the ingredients is listed.

· **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

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

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

· **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

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Print Date 09/21/2016 Revision Date 09/21/2016

Trade Name: UR6001 Black B

(Contd. of page 6)

Carcinogenicity	negative (rat) After 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, it was also found out that exposure of polymeric MDI did not produce pulmonary tumors at concentrations that not leading to recurrent lung tissue damages. Meanwhile, there were no data available regarding tested human number, exposure period, purity of the tested substance etc. (Test species: N/a) The substance was not listed as a carcinogen by OSHA, ACGIH or NTP. IARC Group 3 not classifiable to relevance to humans. When considering all of the evidence, the substance was considered to be of unlikely relevance of carcinogenicity to humans. Reference: ECHA (2011).

· **Potential Health Effect(s):** Not a known Carcinogen.

· **Reproductive Toxicity**

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane	
Reproductive Toxi.	(No data available)
101-68-8 4,4'-diisocyanatodiphenylmethane	
Reproductive Toxi.	(No data available)

· **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	
STOT-Single	(Human) Target organs: Respiratory tract irritation (Category 3) There were human case reports that the substance induced respiratory irritation. Reference: GHS-J (2006) and OECD SIAM (2003).

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

· **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	
STOT-Repeated	(rat) (OECD TG 453) Target organs: respiratory system (Category 1) NOAEC (Inhalation with up to 6.0 mg/m³ of the polymeric MDI for 2 years) = 0.19 mg/m³; the substance caused effects on nasal cavities, lung damages and mediastinal lymph nodes in rats. Reference: ECHA (2011). (human) Target organs: respiratory system (Category 1) 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. Reference: OECD SIAM (2003).

· **Aspiration Hazard**

9016-87-9 Polymer of 4,4'-diisocyanatodiphenylmethane	
Aspiration Hazard	(No data available)
101-68-8 4,4'-diisocyanatodiphenylmethane	
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	
Algae Toxicity	> 1640 mg/l (Scenedesmus subspicatus) (EC50 (3 days), OECD TG 201)

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 7)

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).

· **Aquatic Environmental Toxicity Assessment:** No further relevant information; classification is not possible.

· **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 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)

101-68-8 4,4'-diisocyanatodiphenylmethane

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)

· **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

LogPow	4.51 (Test species: n/a) (OECD TG 117) Reference: ECHA (2011).
BCF	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:** Not regulated as a hazardous waste for disposal.

· **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, 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.

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Print Date 09/21/2016 Revision Date 09/21/2016

Trade Name: UR6001 Black B

(Contd. of page 8)

· **Special Precautions:**	Not applicable.
· **Transport in Bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional Information:**	
· **DOT**	
· **Remarks:**	Not regulated in containers less than 5000lbs.
· **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	30-40%
101-68-8	4,4'-diisocyanatodiphenylmethane	10-20%

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

101-68-8	4,4'-diisocyanatodiphenylmethane	A, C	10-20%

· **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)**

All ingredients are listed.

· **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	D, CBD

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

9016-87-9	Polymer of 4,4'-diisocyanatodiphenylmethane	3
101-68-8	4,4'-diisocyanatodiphenylmethane	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

· **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.

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

None of the ingredients is listed.

(Contd. on page 10)

Safety Data Sheet
acc. to OSHA HCS

(Contd. of page 9)

· **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
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)
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
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** 09/21/2016 / -