
Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

CCW-201 Part A

Synonyms

Aromatic Isocyanate in Polyether Triol

Chemical Family

Product Use

Sealant

Restrictions on Use

Industrial use only

Manufacturer Information

Carlisle Coatings and Waterproofing
900 Hensley Lane
Wylie, TX 75098
www.carlisleccw.com

Phone Numbers:

Medical Emergency
CHEMTREC (USA): 800-424-9300

MSDS Assistance: 972-442-6545
Technical Assistance: 888-229-2199
Customer Service: 888-229-0199

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Carcinogenic – Category 2
Acute Inhalation Toxicity – Category 3
Eye Irritation – Category 2
STOT (Inhalation-Respiratory Irritation) SE – Category 3
Skin Irritation – Category 2
Respiratory Sensitizer – Category 1
Skin Sensitization – Category 1
Aquatic Chronic Toxicity – Category 3

GHS Label Elements

Symbol(s)



Signal Word

Danger

Hazard Statement(s)

Suspected of causing cancer.
Toxic if inhaled.
Causes serious eye irritation.

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May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause respiratory irritation.

May cause an allergic skin reaction.

Harmful to aquatic life with long-lasting effects.

Precautionary Statement(s)

Prevention

Obtain special instructions before use.

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

Do not breathe mist/vapors/spray.

Wash contaminated tissues after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

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

Avoid release to the environment.

Wear protective gloves, clothing, eye protection and face protection.

Wear respiratory protection.

Response

IF exposed or concerned: Get medical advice/attention.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

If eye irritation persists: get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water.

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

Call a POISON CENTER or doctor/physician if you feel unwell.

Specific treatment (remove from exposure and treat symptoms).

Storage

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Disposal

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

Emergency Overview

Physical Description

This product is a clear, light yellow liquid with an odor characteristic of isocyanates.

Health Hazards

DANGER! Inhalation of vapors may be harmful or fatal. Harmful or fatal if swallowed. This compound can cause irritation by all routes of exposure. Eye irritation may be severe. Chronic inhalation may cause lung damage. May cause toxic systemic effects by skin absorption. Can cause skin and respiratory sensitization and allergic reaction. Contains compounds that are suspect carcinogens.

Flammability Hazard

This product is combustible and can ignite if exposed to high temperature or direct flame.

Reactivity Hazard

Contact with water produces heat, carbon dioxide and urea polymers; reaction can be vigorous. Closed containers can rupture violently if contaminated with water or if involved in a fire. Due to the high level

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of the Polyether Triol component, this product may form unstable or flammable peroxides on prolonged exposure to air if stabilizer is depleted.

Environmental Hazard

This product has not been tested for environmental impact. All release to the environment should be avoided. Contains compounds that can cause harm to aquatic organisms.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| CAS | Component Name | Percent |
|------------|--------------------------|-----------|
| 25791-96-2 | Polyether Triol | 70.0-90.0 |
| 584-84-9 | 2,4-Toluene Diisocyanate | 10.0-20.0 |
| 91-08-7 | 2,6-Toluene Diisocyanate | 10.0-20.0 |
| 25322-69-4 | Polyether Diol | 5.0-10.0 |
| 4098-71-9 | Isophorone Diisocyanate | 3.0-7.0 |

Other proprietary and trace components. Each of the other Bala components is present in less than 1 percent concentration (0.1% concentration for potential carcinogens, reproductive toxins, respiratory tract sensitizers, and mutagens).

Section 4 - FIRST AID MEASURES

Protection of First Aid Responders

Rescuers should not attempt to retrieve victims of exposure to this material without adequate personal protective equipment. Rescuers should be taken for medical attention, if necessary. Fire protective gear may be necessary.

Description of First Aid Measures

Remove victim(s) to fresh air, as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary. Remove and isolate contaminated clothing and shoes. Seek immediate medical attention. Take copy of label and MSDS to physician or other health professional with victim(s).

Inhalation

If mists, sprays or fumes of this material are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions.

Skin Exposure

If the material contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 20 minutes. Do not interrupt flushing. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek immediate medical attention.

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Eye Exposure

If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 20 minutes. Do not interrupt flushing.

Ingestion

If this material is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING, unless directly by medical personnel. Have victim rinse mouth with water or give several cupfuls of water, if conscious. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration.

Medical Conditions Aggravated by Exposure

Acute or chronic respiratory conditions, skin and respiratory allergies and asthma may be aggravated by overexposure to this product.

Indication of Immediate Medical Attention and Special Treatment if Needed

Treat symptoms and eliminate overexposure. Be observant for pulmonary edema. Copiously irrigate contaminated skin and eyes with saline. Non-cardiogenic pulmonary edema and bronchospasm are the most immediate serious clinical consequences of isocyanate exposure. Markedly symptomatic patients should receive oxygen, ventilatory support, and an intravenous line. Treatment for asthma includes inhaled sympathomimetics (salbutamol, metaproterenol), intravenous theophylline, parenteral sympathomimetics (epinephrine, terbutaline), and steroids.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use materials appropriate for surrounding materials. Water should be used for cooling of containers only due to reaction with water.

Unsuitable Extinguishing Media

Water and halogenated media.

Protection of Firefighters

Special Hazards Arising from the Substance

This is a combustible liquid which is also toxic by inhalation and skin contact and so presents a contact hazard to fire-fighters. This compound reacts with water to form urea polymers, heat and carbon dioxide. Products of thermal decomposition are highly toxic (refer to Section 10 Stability and Reactivity). This reaction can be vigorous. Not sensitive to mechanical impact under normal conditions. Closed containers may develop pressure and rupture in event of fire or if contaminated with water.

Special Protective Actions for Firefighters

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions and Emergency Procedures

An accidental release may result in a fire. Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Eliminate any possible sources of ignition, and provide maximum explosion-proof ventilation. Use only non-sparking tools and equipment during the response. The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self- Contained Breathing Apparatus and fire protection. Avoid contact with water.

Personal Protective Equipment

Responders should wear the level of protection appropriate to the type of chemical released, the amount of the material spilled, and the location where the incident has occurred.

Small Spills

For releases of 1 drum or less, Level D Protective Equipment (gloves, chemical resistant apron, boots, and eye protection) should be worn.

Large Spills

Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit, fire-retardant clothing and boots, hard hat, and Self- Contained Breathing Apparatus.

Methods for Clean-Up and Containment**All Spills**

Access to the spill area should be restricted. Spread should be limited by gently covering the spill with polypads. Absorb spilled liquid with clay, sand, polypads, or other suitable inert absorbent materials. All contaminated absorbents and other materials should be placed in an appropriate container and seal. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). Dispose of recovered material and report spill per regulatory requirements. Remove all residue before decontamination of spill area. Clean spill area with soap and copious amounts of water. Monitor area for combustible vapor levels and confirm levels are below exposure limits given in Section 8 (Exposure Controls-Personal Protection), if applicable, and that levels are below applicable LELs (see Section 5 – Firefighting Measures) before non-response personnel are allowed into the spill area. Purge equipment with inert gas prior to reuse

Environmental Precautions

Minimize use of water to prevent environmental contamination. Prevent spill or rinsate from contaminating storm drains, sewers, soil or groundwater. Place all spill residues in a suitable container and seal. Do not discharge effluent containing this product into streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

Other Information

U.S. regulations may require reporting of spills of this material that reach surface waters if a sheen is formed. If necessary, the toll-free phone number for the US Coast Guard National Response Center is 1-800-424-8802.

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Reference to Other Sections

See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat or drink while handling this material. Avoid contact with eyes, skin, and clothing. Avoid breathing fumes, dusts, vapors or mist. Do not taste or swallow. Use only with adequate ventilation. Contaminated clothing needs to be laundered prior to reuse. Keep away from heat and flame. In the event of a spill, follow practices indicated in Section 6: ACCIDENTAL RELEASE MEASURES.

Conditions for Safe Storage

Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Containers should be separated from oxidizing materials by a minimum distance of 20 ft. or by a barrier of non-combustible material at least 5 ft. high having a fire-resistance rating of at least 0.5 hours. Storage areas should be made of fire resistant materials. Local Fire Departments should be notified of the storage of this product on site. Storage and processing areas of this product should be identified with a NFPA 704 placard (diamond) large enough to be seen from a distance. Post warning and “NO SMOKING” signs in storage and use areas, as appropriate. Refer to NFPA 30, Flammable and Combustible Liquids Code, for additional information on storage. Have appropriate extinguishing equipment in the storage area (such as sprinkler systems or portable fire extinguishers). Inspect all incoming containers before storage to ensure containers are properly labeled and not damaged. Empty containers may contain residual product; therefore, empty containers should be handled with care.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits/Control Parameters

Ventilation and Engineering Controls

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below.

| | |
|--------------------------------|------------------------------------|
| Isophorone Diisocyanate | 4098-71-9 |
| ACGIH TLV TWA | 0.005 ppm |
| OSHA PEL TWA | 0.005 ppm (vacated 1989 PEL) |
| OSHA PEL STEL | 0.02 ppm [skin] (vacated 1989 PEL) |
| NIOSH REL TWA | 0.005 ppm [skin] |
| NIOSH REL STEL | 0.02 ppm [skin] |

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| | |
|--|---|
| DFG MAK TWA | 0.005 ppm |
| DFG MAK PEAK | 1 MAK 15 minute average value, 1-hr interval, 4 per shift |
| | |
| Polyether Diol | 25322-69-4 |
| Not Established | Not Established |
| Polyether Triol | 25791-96-2 |
| Not Established | Not Established |
| Toluene-2,4-Diisocyanate 2,6 Diisocyanate | 584-84-9 91-08-7 |
| ACGIH TLV TWA | 0.005 ppm (NIC: 0.001), Sensitizer |
| ACGIH TLV STEL | 0.02 ppm (NIC: 0.003), Sensitizer |
| OSHA PEL STEL | 0.02 ppm (ceiling) [CAS# 584-84-9] |
| DFG MAK TWA | Danger of Sensitization of the airways |

Personal Protective Equipment (PPE)

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including the Respiratory Protection Standard (29 CFR 1910.134), Eye Protection Standard 29 CFR 1910.13, the Hand Protection Standard 29 CFR 1910.138, and the Foot Protection Standard 29 CFR 1910.136), equivalent standards of Canada (including the Canadian CSA Respiratory Standard Z94.4-93-02, the CSA Eye Protection Standard Z94.3-M1982, Industrial Eye and Face Protectors and the Canadian CSA Foot Protection Standard Z195-M1984, Protective Footwear). Please reference applicable regulations and standards for relevant details.

Eye/Face Protection

Use approved safety goggles or safety glasses. If necessary, refer to appropriate regulations.

Skin Protection

Wear chemical impervious gloves (e.g., Nitrile or Neoprene). Use triple gloves for spill response. If necessary, refer to appropriate regulations.

Body Protection

Use body protection appropriate for task (e.g., lab coat, coveralls, Tyvek suit). Full-body chemical protection may be necessary. If necessary, refer to the OSHA Technical Manual (Section VII: Personal Protective Equipment) or appropriate Standards of Canada. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in appropriate regulations

Respiratory Protection

If mists or sprays from this product are created during use, use appropriate respiratory protection. If necessary, use only respiratory protection authorized in appropriate regulations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under

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appropriate regulations. The following NIOSH respiratory equipment guidelines for components that present an inhalation hazard are presented for additional assistance in respiratory protective equipment selection.

Isophorone Diisocyanate Concentration

Concentration

Up to 0.05 ppm
Up to 0.125 ppm
Up to 0.25 ppm

Up to 1 ppm

Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions

Escape

Respiratory Protection

Any Supplied-Air Respirator (SAR).
Any SAR operated in a continuous-flow mode.
Any Self-Contained Breathing Apparatus (SCBA) with a full facepiece, or any SAR with a full facepiece.
Any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode..
Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted Organic vapor canister, or any appropriate escape-type, SCBA

2,4-Toluene Diisocyanate Concentration

Concentration

Based on NIOSH REL at Concentrations Above the NIOSH REL, or Where There is No REL, at Any Detectable Concentration:

Escape

Respiratory Protection

Any Self-Contained Breathing Apparatus (SCBA) that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any Supplied-Air Respirator (SAR) that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any appropriate escape-type, SCBA.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------|-------------------------------|----------------------------------|-----------------|
| Appearance | Clear, yellow liquid | Physical State | liquid |
| Odor | Characteristic of isocyanates | Color | Clear, yellow |
| Odor Threshold | Not available | pH | Not available |
| Melting Point | Not available | Boiling Point | Not available |
| Freezing point | Not available | Evaporation Rate | Not available |
| Boiling Point Range | Not available | Flammability (solid, gas) | Not available |
| Autoignition | Not available | Flash Point | 93.25°C (200°F) |

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| | | | |
|------------------------------|---------------|---|---------------|
| Lower Explosive Limit | Not available | Decomposition | Not available |
| Upper Explosive Limit | Not available | Vapor Pressure | Not available |
| Vapor Density (air=1) | Not available | Specific Gravity (water=1) | 1.04 |
| Water Solubility | Insoluble | Partition coefficient: n-octanol/water | Not available |
| Viscosity | Not available | Solubility (Other) | None |
| Density | Not available | VOC | <10mg/L |

Other Information

No additional information available.

Section 10 - STABILITY AND REACTIVITY

Chemical Stability

Stable under normal circumstances of use and handling. May become unstable if stabilizer becomes depleted. At temperatures greater than 177°C (350°F), the Toluene Diisocyanate components is product can form carbodiimides with the release of carbon dioxide, which can cause pressure build up in closed containers.

Conditions to Avoid

Avoid contact with incompatible chemicals and exposure to extreme temperatures.

Incompatible Materials

Based on components, this product may be incompatible with amines, water, strong bases, alcohols, copper alloys, zinc, tin and aluminum compounds.

Hazardous Decomposition Products

Combustion: Thermal decomposition of this product can generate formaldehyde, carbon oxides, nitrogen oxides, hydrogen cyanide, mercury compounds, isocyanates and isocyanic acid. Hydrolysis: Carbon dioxide, heat and urea polymers.

Possibility of Hazardous Reactions/Polymerization

This product may undergo hazardous polymerization in contact with water or materials to which it is incompatible. The reaction may produce heat, carbon dioxide and urea polymers; reaction may be vigorous. Containers may rupture. Due to the high level of the Polyether Triol component, this product may form unstable or flammable peroxides on prolonged exposure to air if stabilizer is depleted.

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

Inhalation of vapors, mists, or sprays of this product can moderately to severely irritate the tissues of the nose, mouth, throat, and upper respiratory system. Symptoms of overexposure may include coughing, sneezing, and difficulty breathing. Severe overexposure via inhalation may result in a potentially fatal

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respiratory disorder (e.g., pulmonary edema, chemical pneumonitis); symptoms may be delayed by hours or even days. Inhalation of high concentrations of this product (as may occur in a poorly ventilated area) may be fatal. Repeated inhalation of mists of this product may cause respiratory disorders (e.g., bronchitis). Inhalation can also lead to adverse central nervous system effects, including dizziness, incoordination, nausea and vomiting. Chronic inhalation of low concentration may cause permanent damage to the lungs and reduced lung function. Effects such as euphoria, muscle incoordination and loss of consciousness have been reported after severe exposure to toluene diisocyanates. Inhalation can cause respiratory sensitization and allergic reaction as described further in this Section.

Skin Contact

Depending on the duration of skin contact, skin overexposures can cause reddening, discomfort and moderate to severe irritation. Prolonged or further contact can cause severe inflammation, redness, rash, swelling and blistering. Repeated skin exposure to low concentration can cause dermatitis. Skin contact can cause allergic reaction. Prolonged skin contact may cause adverse systemic toxicity by skin absorption as described under ingestion or inhalation, as well as sensitization and allergic reaction to the skin.

Eye Contact

Brief contact with the liquid or vapors from this product and the eyes can cause irritation, reddening and watering. Direct eye contact may cause severe eye irritation.

Ingestion

If the product is swallowed, it can irritate the mouth, throat, and other tissues of the gastro-intestinal system or cause burns and may cause nausea, vomiting, and diarrhea. Symptoms can include dizziness, vomiting and incoordination. Ingestion of large amounts may be harmful and cause systemic toxicity. Aspiration into the lungs after ingestion can pose a serious hazard of chemical and pulmonary edema. Ingestion may be fatal.

Injection

Accidental injection of this product (e.g. puncture with a contaminated object) may cause burning, redness, and swelling in addition to the wound.

Target Organs

Acute: Skin, eyes, respiratory system.

Chronic: Skin, respiratory system, neurological system.

Toxicity Data

There are currently no toxicity data available for this product; the following toxicology data are available for components greater than 1% in concentration.

Isophorone Diisocyanate

Standard Draize Test (Skin-Rabbit) 1%/5 days-continuous

LD50 (Oral-Rat) 4825 mg/kg

LD50 (Oral-Cat) 1 mL/kg

LC50 (Inhalation-Rat) 123 mg/m³/4 hours

LC50 (Inhalation-Guinea Pig) 118 mg/m³/1 hour: Behavioral: somnolence (general depressed activity); Lungs, Thorax, or Respiration: dyspnea; Nutritional and Gross Metabolic: weight loss or decreased weight gain

LDLo (Skin-Rat) 1 mL/kg

LDLo (Oral-Mouse) 2500 µL/kg

TCLo (Inhalation-Rat) 7.5 mg/m³/6 hours: Lungs, Thorax, or Respiration: acute pulmonary edema, changes in lung weight

TCLo (Inhalation-Rat) 2.1 mg/m³/6 hours: Lungs, Thorax, or Respiration: other changes

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TCLo (Inhalation-Rat) 1370 µg/m³/4 hours/4 weeks-intermittent: Lungs, Thorax, or Respiration: changes in lung weight; Liver: changes in liver weight; Nutritional and Gross Metabolic: weight loss or decreased weight gain

TCLo (Inhalation-Rat) 7.5 mg/m³/6 hours: Nutritional and Gross Metabolic: body temperature decrease

TCLo (Inhalation-Mouse) 7.5 mg/m³/3 days-intermittent: Immunological Including Allergic: increased immune response; Biochemical: Metabolism (Intermediary): other proteins, effect on inflammation or mediation of inflammation

TDL_o (Oral-Mouse) 415 mg/kg: female 8-12 day(s) after conception: Reproductive: Effects on Newborn: viability index (e.g., # alive at day 4 per # born alive)

TDL_o (Skin-Mouse) 220 mg/kg/12 days-intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure); Biochemical: Metabolism (Intermediary): other proteins, effect on inflammation or mediation of inflammation

TDL_o (Skin-Mouse) 480 mg/kg/28 days-intermittent: Immunological Including Allergic: increase in humoral immune response

TDL_o (Skin-Mouse) 1 pph/3 days-intermittent: Immunological Including Allergic: increased immune response; Biochemical: Metabolism (Intermediary): other proteins, effect on inflammation or mediation of inflammation

Polyether Diol

LD₅₀ (Oral-Rat) ~ 4000 mg/kg

LD₅₀ (Skin-Rabbit) ~ 2000 mg/kg

LC₅₀ (Inhalation-Rat) ~ 200 mg/L/1 hour

Polyether Triol

pen Irritation Test (Skin-Rabbit) 500 mg: Mild

LD₅₀ (Oral-Rat) > 64 mL/kg

LD₅₀ (Skin-Rabbit) > 20 mL/kg

Toluene 2,4-Diisocyanate

Open Irritation Test (Skin-Rabbit) 500 mg: Severe

Standard Draize Test (Skin-Rabbit) 500 mg/24 hour: Moderate

Standard Draize Test (Eye-Rabbit) 100 mg: Severe TCL_o (Inhalation-Woman) 300 ppt/8 hours/5 days: Lungs, Thorax, or Respiration: respiratory obstruction TCL_o (Inhalation-Human) 20 ppb/2 years: Lungs, Thorax, or Respiration: cough, sputum

TCL_o (Inhalation-Human) 500 ppb: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified; Lungs, Thorax, or Respiration: other changes

TCL_o (Inhalation-Human) 80 ppb: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified; Sense Organs and Special Senses (Eye): effect, not otherwise specified; Lungs, Thorax, or Respiration: other changes

LC₅₀ (Inhalation-Rat) 14 ppm/4 hours: Sense Organs and Special Senses (Eye): lacrymation; Behavioral: excitement; Lungs, Thorax, or Respiration: dyspnea LC₅₀ (Inhalation-Rat) 14 ppm/4 hours

LC₅₀ (Inhalation-Mouse) 10 ppm/4 hours: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi, changes in pulmonary vascular resistance LC₅₀ (Inhalation-Mouse) 10 ppm/4 hours

LC₅₀ (Inhalation-Rabbit) 11 ppm/4 hours: Behavioral: excitement; Lungs, Thorax, or Respiration: dyspnea; Gastrointestinal: changes in structure or function of salivary glands LD₃₀ (Oral-Rat) 6.17 gm/kg

LD₅₀ (Oral-Rat) 5800 mg/kg: Gastrointestinal: other changes

LD₅₀ (Oral-Wild Bird Species) 100 mg/kg

LD₅₀ (Skin-Rabbit) > 16 mL/kg LD₅₀ (Intravenous-Mouse) 56 mg/kg

TCL_o (Inhalation-Rat) 0.004 gm/m³/4 hours: Liver: hepatitis (hepatocellular necrosis), zonal

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TCLo (Inhalation-Rat) 204 µg/m³/24 hours/84 days-continuous: Behavioral: muscle contraction or spasticity; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: true cholinesterase, Metabolism (Intermediary): lipids including transport

TCLo (Inhalation-Rat) 102 ppb/24 hours/7 days-continuous: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi

TCLo (Inhalation-Rat) 26 ppm/6 hours/5 weeks-intermittent: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi, chronic pulmonary edema; Related to Chronic Data: death

TCLo (Inhalation-Mouse) 990 ppb/6 hours/14 days-intermittent: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified

TCLo (Inhalation-Mouse) 1500 ppb/71 days-intermittent: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi; Related to Chronic Data: death

TCLo (Inhalation-Rabbit) 1500 ppb/6 hours/79 days-intermittent: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi

TDLo (Oral-Rat) 15 gm/kg/10 days-intermittent: Gastrointestinal: other changes; Liver: other changes; Related to Chronic Data: death

TDLo (Skin-Mouse) 800 mg/kg/4 days-intermittent: Immunological Including Allergic: increased immune response; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 15 mg/kg/3 days-intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure); Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 240 mg/kg/28 days-intermittent: Immunological Including Allergic: increase in humoral immune response

TDLo (Skin-Mouse) 0.03 mL/kg/3 days-intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)

TDLo (Skin-Mouse) 1.8 µL/kg/3 days-intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)

TDLo (Skin-Mouse) 18 µL/kg/17 days-intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)

TDLo (Skin-Mouse) 18.2 µL/kg/31 days-intermittent: Skin and Appendages cutaneous sensitization, experimental (after topical exposure); Immunological Including Allergic: increased immune response

TDLo (Skin-Mouse) 1.7 mg/kg/17 days-intermittent: Immunological Including Allergic: increase in cellular immune response, increase in humoral immune response

TDLo (Skin-Mouse) 90 mg/kg/3 days-intermittent: Immunological Including Allergic: increase in humoral immune response; Biochemical: Metabolism (Intermediary): other proteins, effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 4.8 mg/kg/8 days-intermittent: Lungs, Thorax, or Respiration: other changes; Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 1 pph/3 days-intermittent: Immunological Including Allergic: increased immune response; Biochemical: Metabolism (Intermediary): other proteins, effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 90 mg/kg/3 days-intermittent: Skin and Appendages: dermatitis, allergic (after topical exposure); Biochemical: Metabolism (Intermediary): other proteins, effect on inflammation or mediation of inflammation

TDLo (Skin-Mouse) 7.2 mg/kg/6 days-intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)

TDLo (Multiple Routes-Mouse) 0.3 pph/3 days-intermittent: Lungs, Thorax, or Respiration: bronchiolar constriction; Lungs, Thorax, or Respiration: acute pulmonary edema, changes in lung weight

Safety Data Sheet

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TDLo (Intradermal-Mouse) 500 mg/kg/3 days-intermittent: Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)
 TDLo (Intratracheal-Rat) 48.84 µL/kg/21 days-intermittent: Immunological Including Allergic: other immediate (humoral): urticaria, allergic rhinitis, serum sickness; Biochemical: Metabolism (Intermediary): histamines (including liberation not immunochemical in origin)
 Mutation in Microorganisms (Bacteria-Salmonella typhimurium) 100 µg/plate Mutation in Microorganisms (Bacteria-Salmonella typhimurium) 0.033 mg/plate Specific Locus Test (Mouse Lymphocyte) 75 mg/L
 Sister Chromatid Exchange (Hamster Ovary) 300 mg/L
 Micronucleus Test (Inhalation-Rat) 0.05 ppm/6 hours/4 weeks
 Morphological Transformation (Mouse Fibroblast) 0.2 mg/L/21 days

Toluene 2,6-Diisocyanate

TCLo (Inhalation-Human) 50 ppb: Sense Organs and Special Senses (Olfaction): effect, not otherwise specified; Sense Organs and Special Senses (Eye): effect, not otherwise specified; Lungs, Thorax, or Respiration: other changes
 LD50 (Oral-Wild Bird Species) 100 mg/kg
 TCLo (Inhalation-Mouse) 7.5 mg/m³/3 days-intermittent: Immunological Including Allergic: increased immune response; Biochemical: Metabolism (Intermediary): other proteins, effect on inflammation or mediation of inflammation
 Mutation in Microorganisms (Bacteria-Salmonella typhimurium) 10 µg/plate
 Mutation in Microorganisms (Bacteria-Salmonella typhimurium) 300 µg/plate
 Specific Locus Test (Mouse Lymphocyte) 25 mg/L
 Cytogenetic Analysis (Hamster Ovary) 600 mg/L
 Sister Chromatid Exchange (Hamster Ovary) 300 mg/L
 Morphological Transformation (Mouse Fibroblast) 20 mg/L/21 days

Component Carcinogenicity

| | |
|--|--|
| Toluene 2,4 & 2,6-Diisocyanates | |
| IARC: | 2B - Possibly Carcinogenic to Humans |
| NTP: | R – Reasonable Anticipated to Be a Human Carcinogen |
| NIOSH: | Ca – Potential Occupational Carcinogen, with No Further Categorization |
| ACGIH: | A4 – Not Classifiable as a Human Carcinogen |
| Prop 65: | Toluene Diisocyanate Mixture (CAS# 26471-62-5) |

EPA-II: Inadequate Information to Assess Carcinogenic Potential. IARC-2B: Possibly Carcinogenic to Humans. IARC-3: Possibly Carcinogenic to Humans. NTP-R: Reasonable Anticipated to Be a Human Carcinogen. NIOSH-Ca: Potential Occupational Carcinogen, with No Further Categorization. ACGIH TLV-A4: Not Classifiable as a Human Carcinogen.

Irritancy of Product

This product is irritating by all routes of exposure.

Safety Data Sheet

Material Name: CCW-201 Part A

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Sensitization to the Product

This product contains toluene diisocyanate compounds, which are known human skin and respiratory sensitizers. Exposure can cause allergic reactions. Cross-sensitization between different isocyanates may occur.

Respiratory Sensitization

Initial symptoms of respiratory reactions may appear to be a cold or mild hay fever. However, severe asthmatic symptoms can develop and include wheezing, chest tightness, shortness of breath, difficulty breathing and/or coughing. Fever, chills, general feelings of discomfort, headache, and fatigue can also occur. Symptoms may occur immediately upon exposure (within an hour), several hours after exposure or both, and/or at night. Typically, the asthma improves with removal from exposure (e.g. weekends or vacations) and returns, in some cases, in the form of an "acute attack", on renewed exposure. Sensitized people who continue to work with toluene diisocyanates may develop symptoms sooner after each exposure. The number and severity of symptoms may increase. Death has occurred in sensitized individuals accidentally exposed to relatively low concentrations of toluene diisocyanate. Following removal from exposure, some sensitized workers may continue to show a slow decline in lung function and have persistent respiratory problems such as asthmatic symptoms, chronic bronchitis and hypersensitivity for months or years. Exposure to isocyanates is likely to aggravate existing respiratory disease, such as chronic bronchitis, and emphysema.

Skin Sensitization

Repeated skin contact with toluene diisocyanates has caused skin sensitization in humans, although the condition is not common. Once a person is sensitized, contact with even a small amount can cause outbreaks of dermatitis with symptoms such as redness, rash, itching and swelling. This can spread from the hands or arms to the face and body. Some people who inhaled toluene diisocyanate developed extensive skin rashes can last weeks.

Toxicological Synergistic Products

None known.

Reproductive Toxicity Information

This product has not been tested for reproductive toxicity. Mutagenicity Embryotoxicity /Teratogenicity/ Reproductive Toxicity: Mercury compounds, such as the trace Phenyl Mercury Neodecanoate components, can cause reproductive toxicity effects. No specific information is available.

Biological Exposures Indices (BEIs)

The following BEI's have been established for components, as follows.

| Chemical: Determinant | Sampling Time | BEI |
|--|---------------|--------------------|
| Xylenes Methylhippuric Acide in Urine | End of Shift | 1.5 g/g Creatinine |

Section 12 - ECOLOGICAL INFORMATION

All Work Practices Must be Aimed at Eliminating Environmental Contamination

Mobility

This product has not been tested for mobility in soil. The following information is available for the toluene diisocyanate components.

Safety Data Sheet

Material Name: CCW-201 Part A

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2,4-Toluene Diisocyanate

2,4-Toluene Diisocyanate hydrolyzes rapidly in aqueous solution; therefore, leaching and adsorption to sediment will not be environmentally important.

2,6-Toluene Diisocyanate

2,6-Toluene Diisocyanate reacts readily with water; therefore, leaching of 2,6-toluene diisocyanate in soil should not be important.

Persistence and Biodegradability

This product has not been tested for persistence or biodegradability. The following information is available for the toluene diisocyanate components.

2,4-Toluene Diisocyanate

If released to air, a vapor pressure of 8×10^{-3} mm Hg at 25°C indicates 2,4-toluene Diisocyanate will exist solely as a vapor in the ambient atmosphere. Vapor-phase 2,4-toluene Diisocyanate will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 1.7 days. Atmospheric degradation may also occur through contact with clouds, fog or rain. If released to water or moist soil, 2,4-toluene Diisocyanate is not expected to leach or adsorb to solids due to its rapid degradation reaction with water. 2,4-Toluene Diisocyanate is not expected to volatilize from dry soil surfaces based upon its vapor pressure. If spilled on wet land, TDI is rapidly degraded. If released into water, a crust forms around the liquid TDI and <0.5% of the original material remains after 35 days. Low concentrations of TDI hydrolyze in the aqueous environment in approximately a day.

2,6-Toluene Diisocyanate

If released to air, a vapor pressure of 0.02 mm Hg at 25°C indicates 2,6-Toluene Diisocyanate will exist solely as a vapor in the ambient atmosphere. Vapor-phase 2,6-Toluene Diisocyanate will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 2.5 days. Atmospheric degradation may also occur through contact with clouds, fog or rain. If released to moist soil, 2,6-Toluene Diisocyanate is not expected to leach or adsorb to solids due to its rapid degradation reaction with water. In one experiment simulating a spill, 5.5% of the original material remained after 24 hours and in a field situation; the concentration of TDI had declined to the ppm level in 12 weeks. If released to water, 2,6-Toluene Diisocyanate is not expected to leach or adsorb to solids due to its rapid degradation reaction with water. If released into water in a spill situation, a crust forms around the liquid TDI mixture and <0.5% of the original material remains after 35 days. Low concentrations of TDI hydrolyze in the aqueous environment in approximately a day.

Bio-Accumulation Potential

This product has not been tested for bio-accumulation potential. The following information is available for the toluene diisocyanate components.

2,4-Toluene Diisocyanate

2,4-Toluene Diisocyanate hydrolyzes rapidly in aqueous solution; therefore, bioconcentration will not be environmentally important.

2,6-Toluene Diisocyanate

2,6-Toluene Diisocyanate decomposes in water; therefore, bioconcentration in aquatic organisms is not expected to be an important environmental fate process.

Ecotoxicity

This product has not been tested for aquatic or animal toxicity. All release to terrestrial, atmospheric and aquatic environments should be avoided. The following aquatic toxicity data are available for the toluene diisocyanate components.

2,4-Tolulenediisocyanate

LC50 (fathead minnow) 24 hours = 194.9 mg/L

Safety Data Sheet

Material Name: **CCW-201 Part A**

Product #: **304916**

LC50 (fathead minnow) 48 hours = 172.1 mg/L
LC50 (fathead minnow) 96 hours = 164.5 mg/L
TLm (fathead minnow) 96 hours = 10-1 ppm (est.)

2,6-Tolulenediisocyanate

LC50 (Pimephales promelas fathead minnow) 24 hours = 195 mg/L/Conditions of bioassay not specified
LC50 (Pimephales promelas fathead minnow) 48 hours = 172 mg/L/Conditions of bioassay not specified
LC50 (Pimephales promelas fathead minnow) 96 hours = 164 mg/L/Conditions of bioassay not specified
No Significant Mortality Below (Palaemonetes pugio grass shrimp) 508 mg/L/Conditions of bioassay not specified

Other Adverse Effects

This material is not expected to have any ozone depletion potential.

Environmental Exposure Controls

Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

As supplied, this product would not be a hazardous waste as defined by U.S. federal regulation (40 CFR 261) if discarded or disposed. State and local regulations may differ from federal regulations. The generator of the waste is responsible for proper waste determination and management.

Section 14 - TRANSPORT INFORMATION

US DOT Information:

UN/NA #: Not regulated

IATA Information:

UN#: Not regulated

IMDG Information:

UN#: Not regulated

TDG Information:

UN#: Not regulated

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

U.S. SARA Reporting Requirements: The following components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

Safety Data Sheet

Material Name: CCW-201 Part A

Product #: 304916

| CHEMICAL | SECTION 302 EHS (TPQ) (40 CFR 355, Appendix A) | SECTION 304 RQ (40 CFR Table 302.4) | SECTION 313 TRI (threshold) (40 CFR 372.65) |
|--------------------------|---|--|--|
| Isophorone Diisocyanate | Yes | Yes | Yes |
| 2,4-Toluene Diisocyanate | Yes | Yes | Yes |
| 2,6-Toluene Diisocyanate | Yes | Yes | Yes |

U.S. SARA 302 Extremely Hazardous Threshold Planning Quantity (TPQ)

Isophorone Diisocyanate: 500 lb (227 kg)
 2,4-Toluene Diisocyanate: 500 lb (227 kg)
 2,6-Toluene Diisocyanate: 100 lb (454 kg)

U.S. SARA 304 Extremely Hazardous Reportable Quantity (RQ)

Isophorone Diisocyanate: 500 lb (227 kg)
 2,4-Toluene Diisocyanate: 100 lb (454 kg)
 2,6-Toluene Diisocyanate: 100 lb (454 kg)

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21)

ACUTE: Yes; CHRONIC: Yes; FIRE: No; REACTIVE: Yes; SUDDEN RELEASE: No

U.S. TSCA Inventory Status

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

U.S. CERCLA Reportable Quantity (RQ)

2,4-Toluene Diisocyanate = 100 lb (45.4 kg)
 2,6-Toluene Diisocyanate = 100 lb (45.4 kg)
 Toluene = 100 lb (45.4 kg)

U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ)

2,4-Toluene Diisocyanate = 10,000 lb (4540 kg)
 2,6-Toluene Diisocyanate = 10,000 lb (4540 kg)

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

Toluene Diisocyanate Mixture (CAS# 26471-62-5) is on the California Proposition 65 lists.
 WARNING! This product contains a compound known to the State to cause cancer.

Additional Canadian Regulations

Canadian DSL/NDSL Inventory Status

The components of this product are on the DSL Inventory

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists

Not applicable.

Canadian WHMIS Regulations

This product is classified as a Controlled Product, Hazard Classes, D1A/D2A (Poisonous and Infectious Material, Other Effects/Very Toxic: Inhalation Toxicity, Teratogenicity and Embryotoxicity), D2B (Poisonous and Infectious Material, Other effects/Toxic: Skin Irritation) as per the Controlled Product Regulations. Additional Canadian Regulations.

Additional Mexican Regulations

Mexican Workplace Regulations (NOM-018-STPS-2000)

This product is classified as hazardous



Safety Data Sheet

Material Name: CCW-201 Part A

Product #: 304916

Section 16 - OTHER INFORMATION

HMIS Rating

Health: 3 Fire: 1 Reactivity: 2

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings

Health: 3 Fire: 1 Reactivity: 2

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

New SDS: June 2014

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH - Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:

The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. In many instances, especially when proprietary or trade secret materials are used, CCWI Company must rely upon the hazard evaluation of such components submitted by that product's manufacturer or importer. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use