

1 Identification

· **Product identifier**

- **Trade name:** 210078 A
- **Recommended use** Isocyanates
- **Restrictions on use** For industrial use only

· **Details of the supplier of the safety data sheet**

- **Manufacturer/Supplier:**
Kitpackers China
Room 9,11 Floor, Chuangxin Building Block 1, No.1, Technology Road, Technology Chuangxin Park, West of Dayabay, Huizhou City, Guangdong, China
(86 752) 5533798
- **Information Department:** Product Safety Department: info@tacusil.com.hk
- **Emergency Telephone Number:**
North America - Chemtrec: 1-800-424-9300 (24 hours)
International - Chemtrec: 01-703-527-3887 (24 hours)

2 Hazard(s) identification

· **Classification of the substance or mixture**

- 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.
- STOT RE 2 H373 May cause damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

· **Label elements**

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



GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**

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.
- H373 May cause damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

· **Precautionary statements**

- Do not breathe dust/fume/gas/mist/vapors/spray.
- Wash thoroughly after handling.
- Use only outdoors or in a well-ventilated area.
- Contaminated work clothing must not be allowed out of the workplace.
- Wear protective gloves / eye protection / face protection.
- In case of inadequate ventilation wear respiratory protection.
- If on skin: Wash with plenty of water.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Call a poison center/doctor if you feel unwell.
- Get medical advice/attention if you feel unwell.
- If skin irritation or rash occurs: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.
- If experiencing respiratory symptoms: Call a poison center/doctor.
- Take off contaminated clothing and wash it before reuse.
- Wash contaminated clothing before reuse.
- Store in a well-ventilated place. Keep container tightly closed.
- Store locked up.
- Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA System**

· **NFPA ratings (scale 0 - 4)**



Health = 2
Fire = 1
Reactivity = 0

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 Reactivity = 0
FIRE	1	
REACTIVITY	0	

· Other hazards
· Results of PBT and vPvB assessment

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

3 Composition/information on ingredients

· Chemical characterization: Mixtures
· Dangerous components:

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	40-50%
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· 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:** Immediately remove any clothing soiled by the product.

· After inhalation:

Remove victim from exposure to fresh air. Keep person at rest. Provide oxygen if person is not breathing.

Supply fresh air and if symptoms occur call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

Move to an area free from further exposure. Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Asthmatic symptoms may develop and may be immediate or delayed up to several hours. Diisocyanate vapors or mist at concentrations above the TLV or PEL can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin rash or irritation occurs, seek medical advice.

Remove all contaminated clothing and wash before reuse.

After washing, cover affected skin area with polyethylene glycol (300-500 molecular weight) and wash again immediately with soap and water to thoroughly remove the polyethylene glycol and residual isocyanate. Repeat if necessary.

· After eye contact:

Immediately flush opened eyes with water for 5 minutes, then remove contact lenses if present, continue flushing for at least another 15 minutes.

If symptoms develop seek medical attention.

· After swallowing:

If victim is unconscious; never give anything by mouth.

Do NOT induce vomiting.

If victim is conscious, rinse out mouth with water.

Get medical attention

· **Information for doctor:** Symptoms of exposure may be delayed after severe exposure, keep patient under review for 48 hours.

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

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

Check section 11 Toxicological Information for further relevant information.

5 Fire-fighting measures

· Extinguishing media
· Suitable extinguishing agents:

Use fire fighting measures that suit the environment.

Alcohol resistant foam

Carbon dioxide

dry chemical

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

· Special hazards arising from the substance or mixture

Will not burn unless preheated.

During heating or in case of fire poisonous gases are produced.

Nitrogen oxides (NOx)

Carbon dioxide (CO₂) and Carbon monoxide (CO)

· Advice for firefighters
· Protective equipment:

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).

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acc. to OSHA HCS

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As with any fire, wear positive-pressure self-contained breathing apparatus and full protective gear that are NIOSH approved. (Contd. of page 2)

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

- Do not breathe gas, vapors, dusts or mists if their inhalable particles occur during use.
- Environmental precautions:** Inform respective authorities in case of seepage into water course or sewage system.
- Methods and material for containment and cleaning up:**
 - For large spills: provide diking or containment to minimize spreading. If possible pump and store material in appropriate container.
 - For small spills: Ventilate and wash area. Collect spills and absorbant material in appropriate container.
 - Ensure adequate ventilation.
 - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 - Dispose contaminated material as waste according to item 13.
 - Clean up any spill area with decontaminating solution made up of 50% isopropanol, 45% water and 5% concentrated ammonia solution (% by weight). The solution should cover the area for at least one hour. Absorb with an inert absorbant.
 - Wash the spill site with large quantities of water. Attempt to neutralize by adding suitable decontaminant solution: Formulation 1: sodium carbonate 5 - 10%; liquid detergent 0.2 - 2%; water to make up to 100%, OR Formulation 2: concentrated ammonia solution 3 - 8%; liquid detergent 0.2 - 2%; water to make up to 100%. If ammonia is used, use good ventilation to prevent vapor exposure.

7 Handling and storage

Handling:

Precautions for safe handling

- Ensure good ventilation/exhaustion at the workplace.
- Prevent formation of aerosols.
- Keep away from incompatible material(s).
- Avoid any release into the environment.
- Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating.
- Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.
- Do not breathe dust/fumes/mist/vapor/spray.
- Avoid contact with eyes, skin and clothing.
- Keep away from heat, sparks, flames and ignition sources.
- Observe all the personal protection requirements in Section 8.

Conditions for safe storage, including any incompatibilities

Storage:

- Requirements to be met by storerooms and receptacles:**
- Keep stored in accordance with local, regional, national, and international regulations.

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

101-68-8 4,4'-diisocyanatodiphenylmethane

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

Additional Occupational Exposure Limit Values for possible hazards during processing: None.

Exposure controls

If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Personal protective equipment:

General protective and hygienic measures:

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.

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. Airborne MDI concentrations greater than the ACGIH TLV-TWA (TLV) or OSHA PEL-C (PEL) can occur in inadequately ventilated environments when MDI is sprayed, aerosolized, or heated. Local exhaust should be used to maintain levels below the TLV whenever MDI is heated, sprayed, or aerosolized. Standard reference sources regarding industrial ventilation (e.g., ACGIH Industrial Ventilation Manual) should be consulted for guidance about adequate ventilation. To ensure that published exposure limits have not been exceeded, monitoring for airborne diisocyanate should become part of the overall employee exposure characterization program.

Protection of hands:

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

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Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves



Chemical resistant gloves

Eye protection:



Safety Glasses with side shields

Body protection: Appropriate chemical resistant clothing.

Limitation and supervision of exposure into the environment

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

General Information

Appearance:

Form: Liquid

Color: Brown

Odor: Characteristic

Odor threshold: Not determined.

pH-value: Not determined.
Not determined.

Change in condition

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: Undetermined.

Flash point: >200 °C (>392 °F)

Flammability (solid, gaseous): Not applicable.

Ignition temperature: Not determined.

Decomposition temperature: Not determined.

Auto igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower: Not determined.

Upper: Not determined.

Vapor pressure: Not determined.

Vapor Density: not determined

Density at 20 °C (68 °F): 1.05 g/cm³ (8.76 lbs/gal)

Relative density: Not determined.

Vapor density: Not determined.

Evaporation rate: Not determined.

Solubility in / Miscibility with

Water: Not miscible or difficult to mix.

Partition coefficient (n-octanol/water): Not determined.

Viscosity:

Dynamic: Not available.

Kinematic: Not determined.

VOC content: Not available.

0.00 %

0.0 g/l / 0.00 lb/gal

10 Stability and reactivity

Reactivity No further relevant information available.

Hazardous Reactivity and Chemical Stability Stable under normal conditions of use, storage and temperatures.

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions

In contact with incompatible materials.

No dangerous reactions known.

Conditions to avoid Keep away from heat, sparks, flame and any other ignition sources.

Incompatible materials: Strong oxidizing agent

Hazardous decomposition products: Refer to section 5.

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11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

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

101-68-8 4,4'-diisocyanatodiphenylmethane

Oral	LD50	2,200 mg/kg (mouse)
Dermal	LD50	>9,400 mg/kg (rabbit) (OECD TG 402)
Inhalative	LC50/4 h	0.49 mg/l (rat) (no test detail available)

Based on expert judgment and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

· **on the eye:** Irritating effect.

· **Sensitization:** Sensitization possible through skin contact.

· **Additional toxicological information:**

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

Harmful
Irritant

· **Carcinogenic categories**

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

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· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

None of the ingredients is listed.

12 Ecological information

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

· **Behavior in environmental systems:**

· **Bioaccumulative potential**

No data available.

No further relevant information available.

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

· **Additional ecological information:** The product is non-rapid degradable, and low or not highly bioaccumulative.

· **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Results of PBT and vPvB assessment**

· **PBT:** None of the ingredients is listed.

· **vPvB:** None of the ingredients is listed.

· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Dispose of according to your local waste regulations.

14 Transport information

· **UN-Number**

· **DOT**

NA3082

· **ADN, IMDG, IATA**

not regulated

· **UN proper shipping name**

· **DOT**

Other regulated substances, liquid, n.o.s.

(Diisocyanatodiphenylmethane (MDI))

not regulated

· **ADN, IMDG, IATA**

· **Transport hazard class(es)**

· **DOT**



· **Class**

9 Miscellaneous dangerous substances and articles

· **Label**

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· **ADN/R Class:**

not regulated

· **Packing group**

· **DOT**

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· IMDG, IATA	not regulated
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: No limit On cargo aircraft only: No limit
· UN "Model Regulation":	not regulated

15 Regulatory information

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

· SARA Section 355 (extremely hazardous substances):	
None of the ingredients is listed.	
· SARA Section 313 (Specific toxic chemical listings):	
101-68-8	4,4'-diisocyanatodiphenylmethane 40-50%
· Section 311/312 (Hazardous Chemical Inventory reporting)	
· SARA Section 311/312 (Hazardous Chemical Inventory Reporting)	
101-68-8	4,4'-diisocyanatodiphenylmethane A, C 40-50%

- **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 8 (b) Inventory:	
101-68-8	4,4'-diisocyanatodiphenylmethane ACTIVE

· **Hazardous Air Pollutants**

101-68-8	4,4'-diisocyanatodiphenylmethane
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· **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)**

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· **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**

· **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.

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

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 Development Department
- **Contact:** info@tacusil.com.hk
- **Date of preparation / last revision** 03/20/2019 / -