SAFETY DATA SHEET

WanSponge CST
Wanhua Chemical Group Co., LTD

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>WanSponge CST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Hydrophilic polyurethane prepolymer</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Relevant identified uses of the substance or mixture and uses advised against

<table>
<thead>
<tr>
<th>Relevant identified uses</th>
<th>Prepolymer for production of personal care/cosmetic sponges</th>
</tr>
</thead>
</table>

Details of the supplier of the safety data sheet

<table>
<thead>
<tr>
<th>Registered company name</th>
<th>Wanhua Chemical Group Co., LTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>No.17, Tianshan Rd, YEDA, Yantai China</td>
</tr>
<tr>
<td>Telephone</td>
<td>0535-3031150</td>
</tr>
<tr>
<td>Fax</td>
<td>0535-338222-1150</td>
</tr>
<tr>
<td>Website</td>
<td><a href="http://www.whchem.com">http://www.whchem.com</a></td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:whsds@whchem.com">whsds@whchem.com</a></td>
</tr>
</tbody>
</table>

Emergency telephone number

<table>
<thead>
<tr>
<th>Association / Organisation</th>
<th>Emergency Center of China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency telephone numbers</td>
<td>+86 532-83889090</td>
</tr>
<tr>
<td>Other emergency telephone numbers</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

SUMMARY OF HAZARD IN AN EMERGENCY SITUATION

- Liquid.
- Does not mix with water.
- Sinks in water.
- Toxic by inhalation.
- Irritating to eyes.
- May cause SENSITISATION by inhalation.
- May cause SENSITISATION by skin contact.
- Limited evidence of a carcinogenic effect.

<table>
<thead>
<tr>
<th>Classification [1]</th>
<th>Eye Irritation Category 2A, Respiratory Sensitizer Category 1, Acute Toxicity (Inhalation) Category 3, Skin Sensitizer Category 1, Carcinogenicity Category 2, Skin Corrosion/Irritation Category 3</th>
</tr>
</thead>
</table>

Legend:


Label elements

Hazard pictogram(s)

| Hazard pictogram(s) | |
|---------------------||

SIGNAL WORD

DANGER

Hazard statement(s)

Continued...
Causes serious eye irritation.
Store locked up.
Causes mild skin irritation. 

**Precautionary statement(s) Prevention**

- **P201** Obtain special instructions before use.
- **P261** Avoid breathing mist/vapours/spray.
- **P271** Use only outdoors or in a well-ventilated area.
- **P280** Wear protective gloves/protective clothing/eye protection/face protection.
- **P284** [In case of inadequate ventilation] wear respiratory protection.
- **P272** Contaminated work clothing should not be allowed out of the workplace.

**Precautionary statement(s) Response**

- **P305+P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- **P306+P333** IF exposed or concerned: Get medical advice/attention.
- **P342+P311** If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician/first aider.
- **P302+P352** IF ON SKIN: Wash with plenty of water and soap.
- **P305+P313** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P313** IF SKIN IRRITATION: Wash with plenty of water.
- **P337+P313** If eye irritation persists: Get medical advice/attention.
- **P333+P313** If skin irritation or rash occurs: Get medical advice/attention.
- **P308+P313** IF INHALED: Take off contaminated clothing and wash it before reuse.

**Precautionary statement(s) Storage**

- **P403+P233** Store in a well-ventilated place. Keep container tightly closed.
- **P405** Store locked up.

**Precautionary statement(s) Disposal**

- **P001** Dispose of contents/container in accordance with local regulations.

### Physical and Chemical Hazard

**Liquid**
- Does not mix with water.
- Sinks in water.

**In case of fire and/or explosion, DO NOT BREATHE FUMES.**

### Health Hazards

**Inhaled**

- Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects.
- The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless, inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

**Ingestion**

- Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesication), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

**Skin Contact**

- Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/laceration may occur.

**Eye**

- On the basis, primarily, of animal experiments, concern has been expressed that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.
- Practical evidence shows that inhalation of the material is capable of inducing a sensitisation reaction in a substantial number of individuals at a greater frequency than would be expected from the response of a normal population. Pulmonary sensitisation, resulting in hyperreactive airway dysfunction and pulmonary allergy may be accompanied by fatigue, malaise and aching. Significant symptoms of exposure may persist for extended periods, even after exposure ceases. Symptoms can be activated by a variety of nonspecific environmental stimuli such as automobile exhaust, perfumes and passive smoking.
- Practical experience shows that skin contact with the material is capable of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.
Environmental Hazards
See Section 12

Other hazards

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances
See section below for composition of Mixtures

Mixtures

<table>
<thead>
<tr>
<th>CAS No</th>
<th>% [weight]</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>≥95</td>
<td>Toluene Diisocyanate/Polyethylene Glycol/Trimethylolpropane Copolymer</td>
</tr>
<tr>
<td>26471-62-5*</td>
<td>≤5</td>
<td>Toluene Diisocyanate, Mixture of Toluene-2,4-Diisocyanate and Toluene-2,6-Diisocyanate</td>
</tr>
</tbody>
</table>

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact
If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from the eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact
If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

Inhalation
If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth which may block airway should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.

Ingestion
Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Advise for rescue team (PPE requirement for rescue personnel)

Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

Special hazards arising from the substrate or mixture

| Fire Incompatibility | None known. |

Advice for firefighters

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit irritating/toxic fumes.
- May emit acid smoke.
- Mists containing combustible materials may be explosive.
- May emit poisonous fumes.
- May emit corrosive fumes.

Continued...
SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
See section 8

Measures for Preventing Secondary Contamination
Refer to section above

Environmental precautions
See section 12

Methods and material for containment and cleaning up

**Minor Spills**
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

**Major Spills**
- Moderate hazard.
- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

**Safe handling**
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- **DO NOT** enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
- When handling, **DO NOT** eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storage and handling recommendations contained within this SDS.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
- **DO NOT** allow clothing wet with material to stay in contact with skin.

**Other information**
- The product should be stored in dry condition between 15–25 °C with the integrity of the packaging, and prevented from direct sunlight. The validity of this product is for 6 months. Performance assessment is recommended before use after shelf life.
- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

**Suitable container**
- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

**Storage incompatibility**
- None known

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

| OCCUPATIONAL EXPOSURE LIMITS (OEL) |
| INGREDIENT DATA |
Material name
Not Available
Revised IDLH
Upper end of the range
TEEL-2
0.02 ppm
TEEL-3
0.083 ppm
TEEL-1
0.51 ppm

Ingredient
Toluene Diisocyanate, Mixture of Toluene-2,4-Diisocyanate and Toluene-2,6-Diisocyanate

Original IDLH
Not Available
Revised IDLH
Not Available

In the workplace, the control and protection of hazardous substances are essential to ensure the health and safety of workers. This includes the implementation of appropriate engineering controls and personal protective equipment.

**Engineering controls**

- **Enclosure and/or isolation of emission source** which keeps a selected hazard physically away from the worker and ventilation that strategically ‘adds’ and ‘removes’ air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee exposure.

- **Process controls** which involve changing the way a job activity or process is done to reduce risk. For example, process modifications can be made to reduce the amount of hazardous substance generated or to change the release point or method of release.

- **Local exhaust ventilation** usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.

- **Enclosure and/or isolation of emission source** which keeps a selected hazard physically away from the worker and ventilation that strategically ‘adds’ and ‘removes’ air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee exposure.

- **Local exhaust ventilation** usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.

An approved self contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying ‘escape’ velocities which, in turn, determine the ‘capture velocities’ of fresh circulating air required to effectively remove the contaminant.

**Appropriate engineering controls**

- **Type of Contaminant:**
  - solvent, vapours, degreasing etc., evaporating from tank (in still air).
  - aerosols, fumes from pouring operations, intermittent container filling, low speed conveyor transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation).
  - direct spray, spray painting in shallow booths, drum filling, conveyor loading, crusher dusts, gas discharge (active generation into zone of rapid air motion).
  - grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).

**Air Speed:**

- 0.25-0.5 m/s (50-100 f/min.)
- 0.5-1 m/s (100-200 f/min.)
- 1-2.5 m/s (200-500 f/min.)
- 2.5-10 m/s (500-2000 f/min.)

**Within each range the appropriate value depends on:**

<table>
<thead>
<tr>
<th>Lower end of the range</th>
<th>Upper end of the range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Room air currents minimal or favourable to capture</td>
<td>1: Disturbing room air currents</td>
</tr>
<tr>
<td>2: Contaminants of low toxicity or of nuisance value only.</td>
<td>2: Contaminants of high toxicity</td>
</tr>
<tr>
<td>3: Intermittent, low production.</td>
<td>3: High production, heavy use</td>
</tr>
<tr>
<td>4: Large hood or large air mass in motion</td>
<td>4: Small hood-local control only</td>
</tr>
</tbody>
</table>

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

**Personal protection**

- Wear approved respirator. Correct fit is essential to obtain adequate protection.
- Supplied air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.
- Personal protective equipment (PPE) should be provided and used as necessary to protect employees from exposure to hazardous substances.

**References**

- OSHA (USA) concluded that exposure to sensory irritants can:
  - cause inflammation
  - cause increased susceptibility to other irritants and infectious agents
  - lead to permanent injury or dysfunction
  - accelerate greater absorption of hazardous substances and
  - exacerbate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

- Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers’ responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation.

- Exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

- OSHA (USA) concluded that exposure to sensory irritants can:
  - cause inflammation
  - cause increased susceptibility to other irritants and infectious agents
  - lead to permanent injury or dysfunction
  - accelerate greater absorption of hazardous substances and
  - exacerbate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.
SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Colorless to Light Amber Transparent Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Pungent</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not Available</td>
</tr>
<tr>
<td>pH (as supplied)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Melting point / freezing point (°C)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range (°C)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Flash point (°C)</td>
<td>≥132.2, closed cup</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not Available</td>
</tr>
<tr>
<td>Flammability</td>
<td>Not Available</td>
</tr>
<tr>
<td>Upper Explosive Limit (%)</td>
<td>Not Available</td>
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<tr>
<td>Relative density (Water = 1)</td>
<td>1.18-1.22</td>
</tr>
<tr>
<td>Partition coefficient n-octanol / water</td>
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</tr>
<tr>
<td>Auto-ignition temperature (°C)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
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</tr>
<tr>
<td>Viscosity (mPa.s)</td>
<td>7000-13000 at 25°C</td>
</tr>
<tr>
<td>Molecular weight (g/mol)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Taste</td>
<td>Not Available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not Available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not Available</td>
</tr>
<tr>
<td>Surface Tension (dyn/cm or mN/m)</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, manufacturer’s technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

### Eye and face protection
- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adhesion for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lenses as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 69]. [AS/NZS 1336 or national equivalent]

### Skin protection
See Hand protection below

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

**NOTE:**
- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

### Hands/feet protection

- Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).
- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long term use.
- Contaminated gloves should be replaced.

As defined in ASTM F-739-96 in any application, gloves are rated as:
- Excellent when breakthrough time > 480 min
- Good when breakthrough time > 20 min
- Fair when breakthrough time < 20 min
- Poor when glove material degrades

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:
- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

### Body protection
See Other protection below

- Overalls.
- PVC apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

### Other protection

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adhesion for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lenses as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 69]. [AS/NZS 1336 or national equivalent]
Lower Explosive Limit (%) Not Available
Volatile Component (%vol) Not Available
Vapour pressure (kPa) Not Available
Solubility in water Immiscible
Vapour density (Air = 1) Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity See section 7
Chemical stability
- Unstable in the presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.
Possibility of hazardous reactions See section 7
Conditions to avoid See section 7
Incompatible materials See section 7
Hazardous decomposition products See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

WanSponge CST

Toluene Diisocyanate/Polyethylene Glycol/Trimethylolpropane Copolymer
TOXICITY Not Available
IRRITATION Not Available

Toluene Diisocyanate, Mixture of Toluene-2,4-Diisocyanate and Toluene-2,6-Diisocyanate
TOXICITY Not Available
IRRITATION Not Available

Dermal (rabbit) LD50: >9400 mg/kg[^2]
Inhalation (mouse) LC50: 21.12586785 mg/l6 h[^1]
Skin: adverse effect observed (irritating)[^1]

Legend:
1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

WanSponge CST

Allergic reactions which develop in the respiratory passages as bronchial asthma or rhinoconjunctivitis, are mostly the result of reactions of the allergen with specific antibodies of the IgE class and belong in their reaction rates to the manifestation of the immediate type. In addition to the allergen-specific potential for causing respiratory sensitisation, the amount of the allergen, the exposure period and the genetically determined disposition of the exposed person are likely to be decisive. Factors which increase the sensitivity of the mucosa may play a role in predisposing a person to allergy. They may be genetically determined or acquired, for example, during infections or exposure to irritant substances. Immunologically the low molecular weight substances become complete allergens in the organism either by binding to peptides or proteins (haptens) or after metabolism (prohaptens).

Particular attention is drawn to so-called atopic diathesis which is characterised by an increased susceptibility to allergic rhinitis, allergic bronchial asthma and atopic eczema (neurodermatitis) which is associated with increased IgE synthesis. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure. The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinic point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

Acute Toxicity ✗
Skin Irritation/Corrosion ✗
Serious Eye Damage/Irritation ✗
Respiratory or Skin sensitisation ✗
Mutagenicity ✗

Carcinogenicity ✗
Reproductivity ✗
STOT - Single Exposure ✗
STOT - Repeated Exposure ✗
Aspiration Hazard ✗

Legend:
- Data either not available or does not fill the criteria for classification
- Data available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

WanSponge CST

ENDPOINT TEST DURATION (HR) SPECIES VALUE SOURCE
Not Available Not Available Not Available Not Available Not Available

Continued...
### Toluene Diisocyanate/Polyethylene Glycol/Trimethylolpropane Copolymer

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Test Duration (HR)</th>
<th>Species</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>ca.0.4mg/L</td>
<td>2</td>
</tr>
<tr>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>12.5mg/L</td>
<td>2</td>
</tr>
<tr>
<td>EC50</td>
<td>96</td>
<td>Algae or other aquatic plants</td>
<td>3-230mg/L</td>
<td>2</td>
</tr>
<tr>
<td>NOEC</td>
<td>504</td>
<td>Crustacea</td>
<td>&gt;=0.5mg/L</td>
<td>1</td>
</tr>
</tbody>
</table>

### Legend:
Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene Diisocyanate, Mixture of Toluene-2,4-Diisocyanate and Toluene-2,6-Diisocyanate</td>
<td>HIGH</td>
<td>HIGH</td>
</tr>
</tbody>
</table>

### Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene Diisocyanate, Mixture of Toluene-2,4-Diisocyanate and Toluene-2,6-Diisocyanate</td>
<td>LOW (BCF = 5)</td>
</tr>
</tbody>
</table>

### Mobility in soil

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene Diisocyanate, Mixture of Toluene-2,4-Diisocyanate and Toluene-2,6-Diisocyanate</td>
<td>LOW (KOC = 9114)</td>
</tr>
</tbody>
</table>

### Other adverse effects

No data available

### SECTION 13 DISPOSAL CONSIDERATIONS

**Waste treatment methods**

- Containers may still present a chemical hazard/danger when empty.
- Return to supplier for reuse/recycling if possible.
- Otherwise:
  - If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
  - Where possible retain label warnings and SDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorised landfill.
- Recycle containers if possible, or dispose of in an authorised landfill.

**Contaminated packing materials:**

Refer to section above

**Precautions for Transport:**

Refer to section above

### SECTION 14 TRANSPORT INFORMATION

**Labels Required**

Continued...
Marine Pollutant
NO
Not Applicable

Land transport (UN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code
Not Applicable

Precautions for Transport

Suitable Containers
See section 7

SECTION 15 REGULATORY INFORMATION

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

TOLUENE DIISOCYANATE-POLYETHYLENE GLYCOL-TRIMETHYLOLPROPANE COPOLYMER IS FOUND ON THE FOLLOWING REGULATORY LISTS
China Inventory of Existing Chemical Substances

TOLUENE DIISOCYANATE, MIXTURE OF TOLUENE-2,4-DIISOCYANATE AND TOLUENE-2,6-DIISOCYANATE(26471-62-5*) IS FOUND ON THE FOLLOWING REGULATORY LISTS
China Inventory of Existing Chemical Substances
China Inventory of Hazardous Chemicals (Chinese)
IMO IBC Code Chapter 17: Summary of minimum requirements
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

National Inventory Status

<table>
<thead>
<tr>
<th>National Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia - AICS</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada - DSL</td>
<td>No (Toluene Diisocyanate/Polyethylene Glycol/Trimethylolpropane Copolymer)</td>
</tr>
<tr>
<td>Canada - NSDL</td>
<td>No (Toluene Diisocyanate, Mixture of Toluene-2,4-Diisocyanate and Toluene-2,6-Diisocyanate)</td>
</tr>
<tr>
<td>China - IECSC</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe - EINEC / ELINCS / NLP</td>
<td>No (Toluene Disocyanate/Polyethylene Glycol/Trimethylolpropane Copolymer)</td>
</tr>
<tr>
<td>Japan - ENCS</td>
<td>No (Toluene Diisocyanate/Polyethylene Glycol/Trimethylolpropane Copolymer)</td>
</tr>
<tr>
<td>Korea - KEIC</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand - NZIoC</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines - PICCS</td>
<td>No (Toluene Diisocyanate/Polyethylene Glycol/Trimethylolpropane Copolymer)</td>
</tr>
<tr>
<td>USA - TSCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Taiwan - TCSI</td>
<td>Yes</td>
</tr>
<tr>
<td>Mexico - INSQ</td>
<td>No (Toluene Diisocyanate/Polyethylene Glycol/Trimethylolpropane Copolymer)</td>
</tr>
<tr>
<td>Vietnam - NCI</td>
<td>Yes</td>
</tr>
<tr>
<td>Russia - ARIPS</td>
<td>No (Toluene Diisocyanate/Polyethylene Glycol/Trimethylolpropane Copolymer)</td>
</tr>
<tr>
<td>Thailand - TECI</td>
<td>No (Toluene Diisocyanate/Polyethylene Glycol/Trimethylolpropane Copolymer)</td>
</tr>
</tbody>
</table>

Legend:
Yes = All declared ingredients are on the inventory
No = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Revision Date 24/04/2019
Initial Date 24/04/2019

Other information
Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations
PC — TWA: Permissible Concentration-Time Weighted Average
PC — STEL: Permissible Concentration-Short Term Exposure Limit
ACGIH: American Conference of Governmental Industrial Hygienists
OSF: Odour Safety Factor
IDLH: Immediately Dangerous to Life or Health Concentrations
NOAEL: No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
Disclaimer

The information in the SDS applies only for the specified product and does not include mixtures of this product with other substances and mixtures. The SDS provides product safety information for personnel trained to use this product only.

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