SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : JM One-Step Foamable Adhesive Part 1

Manufacturer or supplier's details
Company : Johns Manville
Address : P.O. Box 5108
Denver, CO USA 80127
Telephone : +1 303-978-2000 8:00 a.m.-5:00 p.m. M-F
Emergency telephone number : 1-800-424-9300 (Chemtrec, in English)

Prepared by : productsafety@jm.com

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Acute toxicity (Inhalation) : Category 4
Skin irritation : Category 2
Eye irritation : Category 2A
Respiratory sensitisation : Category 1
Skin sensitisation : Category 1
Specific target organ toxicity - single exposure : Category 3

GHS label elements
Hazard pictograms : 

Signal word : Danger

Hazard statements : H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H332 Harmful if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.

Precautionary statements : Prevention:
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of
the workplace.
P280 Wear eye protection/ face protection.
P280 Wear protective gloves.
P285 In case of inadequate ventilation wear respiratory protection.

Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.

Storage:
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>polymethylenepolyphenylene isocyanate</td>
<td>9016-87-9</td>
<td>&gt;= 30 - &lt; 50</td>
</tr>
<tr>
<td>4,4’-methylenediphenyl disocyanate</td>
<td>101-68-8</td>
<td>&gt;= 30 - &lt; 50</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice:
Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled:
Call a physician or poison control centre immediately.
If unconscious, place in recovery position and seek medical advice.

In case of skin contact:
If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact:
Remove contact lenses.
Immediately flush eye(s) with plenty of water.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed:
Do NOT induce vomiting.
Clean mouth with water and drink afterwards plenty of water.
Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed:
None known.

SECTION 5. FIREFIGHTING MEASURES

Unsuitable extinguishing media:
High volume water jet

Hazardous combustion products:
Hazardous combustion products

Specific extinguishing methods:
Standard procedure for chemical fires.

Further information:
Standard procedure for chemical fires.

Special protective equipment for firefighters:
Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
Use personal protective equipment.
Ensure adequate ventilation.

Environmental precautions:
Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up:
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion:
Normal measures for preventive fire protection.
Advice on safe handling: Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage: Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-methylenediphenyl diisocyanate</td>
<td>101-68-8</td>
<td>TWA</td>
<td>0.005 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.005 ppm 0.05 mg/m3</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>0.02 ppm 0.2 mg/m3</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>0.02 ppm 0.2 mg/m3</td>
<td>OSHA</td>
</tr>
</tbody>
</table>

Personal protective equipment

Respiratory protection: In the case of vapour formation use a respirator with an approved filter.

Hand protection

Remarks: Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Eye protection: Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection: Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday. Written instructions for handling must be available at the work place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid
Colour : amber
Odour : aromatic
Odour Threshold : No data available
pH : No data available
Melting point/freezing point : No data available
Initial boiling point and boiling range : No data available
Flash point : 176 °C
Evaporation rate : No data available
Flammability (solid, gas) : No data available
Upper explosion limit : No data available
Lower explosion limit : 0.4 %(V)
Vapour pressure : No data available
Relative vapour density : No data available
Relative density : No data available
Density : 1.12 g/cm3
Solubility(ies)
Water solubility : completely soluble
Solubility in other solvents : No data available
Partition coefficient: n-octanol/water : No data available
Auto-ignition temperature : 400 °C
Thermal decomposition : No data available
Viscosity, dynamic : No data available
Viscosity, kinematic : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.
Chemical stability : No decomposition if stored and applied as directed.
Possibility of hazardous reactions : No decomposition if stored and applied as directed.
Conditions to avoid : Heat

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:
Acute inhalation toxicity : Acute toxicity estimate : 11 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute toxicity

Components:
polymethylenepolyphenylene isocyanate:
Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Acute inhalation toxicity : LC50 (Rat): 0.49 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity : LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: OECD Test Guideline 402

Acute toxicity

4,4'-methylene diphenyl diisocyanate:
Acute oral toxicity : LD50 (Rat): 31,600 mg/kg
LD50 (Rat): > 7,616 mg/kg
Method: OECD Test Guideline 401
Acute inhalation toxicity : LC50 (Rat, male): 0.368 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Acute dermal toxicity : LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation

**Product:**
Remarks: May cause skin irritation and/or dermatitis.

Skin corrosion/irritation

**Components:**
*polymethylenepolyphenylene isocyanate:*
Species: Rabbit
Result: Skin irritation

Skin corrosion/irritation

*4,4’-methylenediphenyl diisocyanate:*
Species: Rabbit
Method: Draize Test
Result: Mild skin irritant

Species: Human
Result: irritating

Serious eye damage/eye irritation

**Product:**
Remarks: May cause irreversible eye damage.

Serious eye damage/eye irritation

**Components:**
*polymethylenepolyphenylene isocyanate:*
Species: Rabbit
Result: Mild eye irritation

Serious eye damage/eye irritation

*4,4’-methylenediphenyl diisocyanate:*
Species: Rabbit
Result: Moderate eye irritation
Method: Draize Test

Species: Human
Result: irritating

Respiratory or skin sensitisation

**Product:**
Remarks: May cause sensitisation of susceptible persons by skin contact or by inhalation of aerosol or dust.

Respiratory or skin sensitisation

**Components:**
polymethylenepolyphenylene isocyanate:
Exposure routes: Dermal
Species: Mouse
Assessment: May cause sensitisation by skin contact.
Method: OECD Test Guideline 429
Result: positive

Exposure routes: Inhalation
Species: Guinea pig
Assessment: May cause sensitisation by inhalation.
Result: positive

Respiratory or skin sensitisation
4,4’-methylenediphenyl diisocyanate:
Exposure routes: Dermal
Species: Mouse
Assessment: May cause sensitisation by skin contact.
Method: OECD Test Guideline 429
Result: positive

Exposure routes: Inhalation
Species: Guinea pig
Assessment: May cause sensitisation by inhalation.
Result: positive

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

STOT - single exposure

Components:
polymethylenepolyphenylene isocyanate:
Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

STOT - single exposure
4,4’-methylenediphenyl diisocyanate:
Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.
STOT - repeated exposure

Components:
- polymethylenepolyphenylene isocyanate:
  Exposure routes: Inhalation
  Target Organs: Respiratory Tract
  Assessment: Causes damage to organs through prolonged or repeated exposure.

STOT - repeated exposure
- 4,4’-methylenediphenyl diisocyanate:
  Exposure routes: Inhalation
  Target Organs: Respiratory Tract
  Assessment: Causes damage to organs through prolonged or repeated exposure.

Further information

Product:
Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects

Product:
Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Disposal of residual product : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with
Contaminated packaging: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International transport regulations
These products are not classified as dangerous goods according to international transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA list
TSCA - 5(a) Significant New Use Rule List of Chemicals: Not relevant

U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D): Not relevant

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4'-methylene diisocyanate</td>
<td>101-68-8</td>
<td>5000</td>
<td>*</td>
</tr>
</tbody>
</table>

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313:

- polymethylene polyphenylene isocyanate 9016-87-9
- 4,4'-methylene diisocyanate 101-68-8

Clean Air Act
The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

- 4,4'-methylene diisocyanate 101-68-8
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

- 4,4’-methylenediphenyl diisocyanate 101-68-8

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:
- TSCA : On TSCA Inventory
- DSL : All components of this product are on the Canadian DSL

SECTION 16. OTHER INFORMATION

Further information
Revision Date : 01/02/2018

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.