

JM SP Liquid Flashing Resin – Part B

Version 1.1

Revision Date 02/22/2021

Print Date 02/23/2021

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : JM SP Liquid Flashing Resin – Part B

Manufacturer or supplier's details

Company : Johns Manville
Address : P.O. Box 5108
Denver, CO USA 80127
Telephone : +1-303-978-2000
Emergency telephone : 24-Hour Number: +1-800-424-9300 (CHEMTREC)
number

Company : Johns Manville Canada Inc.
Address : 5301 42 Avenue
Innisfail, AB Canada T4G 1A2
Telephone : +1-303-978-2000
Emergency telephone : 24-Hour Number: +1-800-424-9300 (CHEMTREC)
number

Recommended use of the chemical and restrictions on use

Restrictions on use : For professional users only.
Prepared by : productsafety@jm.com

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with 29 CFR 1910.1200 (OSHA HCS 2012) and the Hazardous Products Regulations (WHMIS 2015)**

Acute toxicity (Inhalation) : Category 4
Skin sensitisation : Category 1
Specific target organ toxicity : Category 3 (Respiratory system)
- single exposure

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

Precautionary statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.

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P280 Wear protective gloves.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P363 Wash contaminated clothing before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical name	CAS-No.	Concentration (%)
hexamethylene diisocyanate, oligomers	28182-81-2	>= 60 - <= 80
cyclohexane, 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethyl-, homopolymer	53880-05-0	>= 10 - <= 30
hexamethylene diisocyanate	822-06-0	>= 0.1 - < 1
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	4098-71-9	>= 0.1 - < 1

Actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- | | | |
|-------------------------|---|---|
| If inhaled | : | Remove to fresh air immediately. Get medical attention immediately.
If breathing is irregular or stopped, administer artificial respiration. |
| In case of skin contact | : | In case of contact, flush skin with plenty of water for at least 5 minutes while removing contaminated clothing and shoes.
Call a physician if irritation develops or persists. |
| In case of eye contact | : | Rinse immediately with plenty of water, also under the eyelids, for at least 5 minutes.
If easy to do, remove contact lens, if worn.
Protect unharmed eye.
If eye irritation persists, consult a specialist. |
| If swallowed | : | DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Gently wipe or rinse the inside of the mouth with water. |

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Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician or Poison Control Centre immediately.

Most important symptoms and effects, both acute and delayed : May cause an allergic skin reaction.
Toxic if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray
Carbon dioxide (CO₂)
Foam
Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : The product reacts with water and generates heat.

Hazardous combustion products : carbon oxides
nitrogen oxides
isocyanates
hydrogen cyanide

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.
Evacuate personnel to safe areas.

Methods and materials for containment and cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).
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 : 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.
Do not breathe vapours or spray mist.
Avoid formation of aerosol.
Avoid contact with skin and eyes.
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 containers tightly closed in a dry, cool and well-

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ventilated place.
 To maintain product quality, do not store in heat or direct sunlight.

Materials to avoid : Never allow product to get in contact with water during storage.
 Keep away from oxidizing agents, strongly acid or alkaline materials, as well as of amines, alcohols and water.
 Keep away from metals.
 Keep away from solvents.

Recommended storage temperature : 10 - 27 °C
 Storage period : 12 Months
 Further information on storage stability : Protect from heat, freezing and ultraviolet light .

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
hexamethylene diisocyanate	822-06-0	TWA	0.005 ppm	ACGIH
		TWA	0.005 ppm 0.035 mg/m ³	NIOSH REL
		C	0.02 ppm 0.14 mg/m ³	NIOSH REL
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	4098-71-9	TWA	0.005 ppm	ACGIH
		TWA	0.005 ppm 0.045 mg/m ³	NIOSH REL
		ST	0.02 ppm 0.18 mg/m ³	NIOSH REL

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
hexamethylene diisocyanate	822-06-0	1,6-Hexamethylene diamine	Urine	End of shift	15 µg/g creatinine	ACGIH BEI

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

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Hand protection		
Material	:	Neoprene gloves
Material	:	butyl-rubber
Material	:	Nitrile rubber
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	:	Wear safety glasses with side shields or goggles. Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Wear protective clothing, such as long-sleeved shirts and pants. Remove and wash contaminated clothing before re-use.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. Written instructions for handling must be available at the work place. When using do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	colorless
Odour	:	very faint
Odour Threshold	:	No data available
pH	:	No data available
Melting point/range	:	not determined
Boiling point/boiling range	:	230 °C
Flash point	:	181 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	Vapors are heavier than air and may travel along the floor and in the bottom of containers.
Relative density	:	No data available
Density	:	1.15 g/cm ³
Solubility(ies)		
Water solubility	:	immiscible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available

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Auto-ignition temperature : No data available
 Thermal decomposition : No data available

Viscosity
 Viscosity, dynamic : 3,000 mPa.s

Viscosity, kinematic : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Container can be pressurized by carbon dioxide due to reaction with humid air and/or water.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Mixture reacts slowly with water resulting in evolution of carbon dioxide.
 Polymerisation is a highly exothermic reaction and may generate sufficient heat to cause thermal decomposition and/or rupture containers.

Conditions to avoid : Do not expose to temperatures above: 177 °C
 Exposure to moisture
 Extremes of temperature and direct sunlight.

Incompatible materials : Water
 Strong bases
 Acids
 Alcohols
 Metals
 Amines
 Strong oxidizing agents

Hazardous decomposition products : carbon oxides
 nitrogen oxides
 Isocyanates
 Hydrogen cyanide (hydrocyanic acid)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate : > 2,000 mg/kg
 Method: Calculation method

Acute inhalation toxicity : Method: Expert judgement
 Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : Acute toxicity estimate : > 2,000 mg/kg
 Method: Calculation method

Acute toxicity

Components:

hexamethylene diisocyanate, oligomers:

Acute oral toxicity : LD50 (Rat, female): > 2,500 mg/kg
 Method: OECD Test Guideline 423

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 GLP: yes
 Remarks: No mortality was observed.

Acute inhalation toxicity : LC50 (Rat, female): ca. 0.390 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Method: OECD Test Guideline 403
 GLP: yes
 Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
 Method: OECD Test Guideline 402
 GLP: yes
 Remarks: No mortality was observed.
 No significant adverse effects were reported

Acute toxicity
cyclohexane, 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethyl-, homopolymer:

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg
 Method: OECD Test Guideline 423
 GLP: yes

Acute inhalation toxicity : LC50 (Rat, male and female): 3.5375 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist
 Method: OECD Test Guideline 403
 GLP: yes

Acute dermal toxicity : Assessment: The substance or mixture has no acute dermal toxicity

Acute toxicity
hexamethylene diisocyanate:

Acute oral toxicity : LD50 (Rat, male): 746 mg/kg
 Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): 0.124 mg/l
 Exposure time: 4 h
 Test atmosphere: vapour
 Method: OECD Test Guideline 403
 GLP: yes

Acute dermal toxicity : LD50 (Rat, male and female): > 7,000 mg/kg
 Method: OECD Test Guideline 402

Acute toxicity
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:

Acute oral toxicity : LD50 (Rat, male and female): 4,814 mg/kg
 Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): 0.031 mg/l
 Exposure time: 4 h
 Test atmosphere: vapour
 Method: OECD Test Guideline 403

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Acute dermal toxicity : LD50 (Rat, male and female): > 7,000 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation**Components:****hexamethylene diisocyanate:**

Species: Rabbit

Method: OECD Test Guideline 404

Result: Corrosive after 1 to 4 hours of exposure

Skin corrosion/irritation**3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:**

Method: OECD Test Guideline 435

Result: Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation**Components:****hexamethylene diisocyanate:**

Species: Rabbit

Result: Risk of serious damage to eyes.

Method: OECD Test Guideline 405

Serious eye damage/eye irritation**3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:**

Species: Rabbit

Result: Risk of serious damage to eyes.

Method: OECD Test Guideline 405

Respiratory or skin sensitisation**Product:**

Assessment: Does not cause respiratory sensitisation.

Remarks: Expert judgement

Respiratory or skin sensitisation**Components:****hexamethylene diisocyanate, oligomers:**

Test Type: Maximisation Test

Exposure routes: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

GLP: yes

Respiratory or skin sensitisation**cyclohexane, 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethyl-, homopolymer:**

Test Type: local lymph node assay (LLNA)

Exposure routes: Skin contact

Species: Mouse

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Method: OECD Test Guideline 429
Result: The product is a skin sensitiser, sub-category 1B.
GLP: yes

Respiratory or skin sensitisation**hexamethylene diisocyanate:**

Exposure routes: inhalation (vapour)

Species: Guinea pig

Assessment: Probability of respiratory sensitisation in humans based on animal testing

Test Type: Maximisation Test

Exposure routes: Intradermal

Species: Guinea pig

Assessment: May cause sensitisation by skin contact.

Method: OECD Test Guideline 406

Respiratory or skin sensitisation**3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:**

Exposure routes: Intradermal

Species: Guinea pig

Assessment: Probability of respiratory sensitisation in humans based on animal testing

Test Type: Maximisation Test

Exposure routes: Intradermal

Species: Guinea pig

Assessment: May cause sensitisation by skin contact.

Method: OECD Test Guideline 406

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 (29 CFR 1910 Subpart Z, Toxic and Hazardous Substances).

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:****hexamethylene diisocyanate, oligomers:**

Exposure routes: Inhalation

Target Organs: Respiratory system

Assessment: May cause respiratory irritation.

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STOT - single exposure**cyclohexane, 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethyl-, homopolymer:**

Exposure routes: Inhalation

Target Organs: Respiratory system

Assessment: May cause respiratory irritation.

STOT - single exposure**hexamethylene diisocyanate:**

Exposure routes: inhalation (vapour)

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

STOT - single exposure**3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:**

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

Further information**Product:**

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:**

- Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 72 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Method: Regulation (EC) No. 440/2008, Annex, C.1
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 27 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Method: Regulation (EC) No. 440/2008, Annex, C.2
- Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 70 mg/l
Exposure time: 72 h
Test Type: static test
Method: Regulation (EC) No. 440/2008, Annex, C.3
- NOEC (Desmodesmus subspicatus (green algae)): 4.4 mg/l
Exposure time: 72 h
Test Type: static test
Method: Regulation (EC) No. 440/2008, Annex, C.3

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Persistence and degradability**Components:****3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:**

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 6.9 mg/l
Biodegradation: 8 %
Exposure time: 28 d
Method: Directive 67/548/EEC Annex V, C.4.A.
Remarks: Information taken from reference works and the literature.

Bioaccumulative potential**Components:****hexamethylene diisocyanate, oligomers:**

Partition coefficient: n- : log Pow: 9.81 (20 °C)
octanol/water

hexamethylene diisocyanate:

Partition coefficient: n- : log Pow: 3.2
octanol/water Remarks: estimated

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:

Partition coefficient: n- : log Pow: 0.99 (23 °C)
octanol/water pH: 6.34
Method: OECD Test Guideline 107

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 : No data available
information

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Dispose of contents/container to an approved facility in
accordance with local, regional, national and international
regulations.

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SECTION 14. TRANSPORT INFORMATION

International transport regulations

Land transport

USDOT: Not classified as a dangerous good under transport regulations

TDG: Not classified as a dangerous good under transport regulations

Sea transport

IMDG: Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO: Not classified as a dangerous good under transport regulations

SECTION 15. REGULATORY INFORMATION

TSCA list

TSCA - 5(a) Significant New Use Rule List of Chemicals : No substances are subject to a Significant New Use Rule.

U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpart D) : No substances are subject to TSCA 12(b) export notification requirements.

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

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
hexamethylene diisocyanate	822-06-0	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	4098-71-9	500	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Respiratory or skin sensitisation
 Specific target organ toxicity (single or repeated exposure)
 Acute toxicity (any route of exposure)

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

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This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

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).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

California Prop. 65

This product does not require a warning under the California Safe Drinking Water and Toxic Enforcement Act (Proposition 65).

The components of this product are reported in the following inventories:

TSCA : On the inventory, or in compliance with the inventory

DSL : On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION**Further information**

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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.