

## JM Spray Polyurethane Foam (SPF) – Component A (USA and Canada)

Version 2.1

Revision Date 05/14/2018

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### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : JM Corbond® III Closed-cell SPF – Component A, JM Corbond MCS™ (Multiple Climate System) Closed-cell SPF – Component A, JM Corbond® Open-cell (oc) SPF – Component A, JM Corbond® Open-cell Appendix X (ocx) SPF – Component A

#### 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 (Respiratory system)  
 Specific target organ toxicity - repeated exposure (Inhalation) : Category 1 (Respiratory system)

#### GHS label elements

Hazard pictograms : 

Signal word : Danger

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

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difficulties if inhaled.  
 H335 May cause respiratory irritation.  
 H372 Causes damage to organs (Respiratory system) through prolonged or repeated exposure if inhaled.

Precautionary statements :

**Prevention:**

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
 P264 Wash skin thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P271 Use only outdoors or in a well-ventilated area.  
 P272 Contaminated work clothing should not be allowed out of the workplace.  
 P280 Wear protective gloves/ eye protection/ face protection.  
 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 person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor 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.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
 P337 + P313 If eye irritation persists: Get medical advice/ attention.  
 P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.  
 P362 Take off contaminated clothing and wash 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 (%)
polymethylenepolyphenylene isocyanate	9016-87-9	>= 50 - <= 70
4,4'-methylenediphenyl diisocyanate	101-68-8	>= 30 - <= 50

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**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 : 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, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Get medical attention if irritation develops and persists.
- In case of eye contact : In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
If easy to do, remove contact lens, if worn.  
Keep eye wide open while rinsing.  
Protect unharmed eye.  
Seek medical advice.
- If swallowed : Do NOT induce vomiting.  
Gently wipe or rinse the inside of the mouth with water.  
Never give anything by mouth to an unconscious person.  
If swallowed, call a poison control centre or doctor immediately.
- Most important symptoms and effects, both acute and delayed : Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
Harmful if inhaled.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause respiratory irritation.  
Causes damage to organs through prolonged or repeated exposure if inhaled.

**SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Water mist  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical  
Foam
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : The product reacts with water and generates heat.

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Hazardous combustion products	:	carbon oxides nitrogen oxides isocyanates hydrogen cyanide
Specific extinguishing methods	:	Use a water spray to cool fully closed containers.
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. Immediately evacuate personnel to safe areas.
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). Recovered material should be stored in a vented container. The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to overpressurization of the container. Large spills should be collected mechanically (remove by pumping) for disposal.

### SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Provide sufficient air exchange and/or exhaust in work rooms. Do not breathe vapours/dust. Avoid formation of aerosol. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area. 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. For personal protection see section 8.
Conditions for safe storage	:	Keep container tightly closed in a dry and well-ventilated place.

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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

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
4,4'-methylenediphenyl diisocyanate	101-68-8	TWA	0.005 ppm	ACGIH
		TWA	0.005 ppm 0.05 mg/m <sup>3</sup>	NIOSH REL
		C	0.02 ppm 0.2 mg/m <sup>3</sup>	NIOSH REL
		C	0.02 ppm 0.2 mg/m <sup>3</sup>	OSHA

Johns Manville is a member of the Center for the Polyurethanes Industry (CPI) of the American Chemistry Council. For more information about safe work practices, see CPI's *Health and Safety Product Stewardship Workbook for High-Pressure Application of Spray Polyurethane Foam (SPF)* and other resources (some available in Spanish and French) at the following website hyperlinks: <https://www.spraypolyurethane.org/resources/> and <https://www.spraypolyurethane.org/additional-resources/>.

#### 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.

#### Hand protection

Material : Nitrile rubber

Material : butyl-rubber

Material : Neoprene

Material : PVC

**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

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	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. Remove and wash contaminated clothing before re-use.
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.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	: viscous liquid
Colour	: dark brown
Odour	: musty
Odour Threshold	: No data available
pH	: No data available
Melting point/freezing point	: No data available
Initial boiling point and boiling range	: > 204 °C Decomposition
Flash point	: > 230 °C
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: 13.9 hPa (40 °C)
Relative vapour density	: No data available
Relative density	: ca. 1.235 (25 °C) (Water = 1.0)
Solubility(ies)	

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Water solubility	: insoluble
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Thermal decomposition	: > 300 °C
Viscosity, dynamic	: No data available
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 normal 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 If contained in exposed to high heat (> 350 °F), it can be pressurized and possibly rupture. Methylene diisocyanate reacts slowly with water to form carbon dioxide gas. This gas can cause sealed container to expand and possibly rupture.
Incompatible materials	: Water Strong bases Acids Alcohols Metals
Hazardous decomposition products	: carbon oxides nitrogen oxides Isocyanates Hydrogen cyanide (hydrocyanic acid)

**SECTION 11. TOXICOLOGICAL INFORMATION****Acute toxicity**

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**Components:****polymethylenepolyphenylene isocyanate:**

Acute oral toxicity : LD50 (Rat): &gt; 2,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0.49 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mistAcute dermal toxicity : LD50 (Rabbit, male and female): > 9,400 mg/kg  
Method: OECD Test Guideline 402**Acute toxicity****4,4'-methylenediphenyl diisocyanate:**

Acute oral toxicity : LD50 (Rat): 31,600 mg/kg

LD50 (Rat): > 7,616 mg/kg  
Method: OECD Test Guideline 401Acute inhalation toxicity : LC50 (Rat, male): 0.368 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403Acute dermal toxicity : LD50 (Rabbit, male and female): > 9,400 mg/kg  
Method: OECD Test Guideline 402**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 irritantSpecies: Human  
Result: irritating**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



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Result: Moderate eye irritation  
Method: Draize Test

Species: Human  
Result: irritating

Respiratory sensitisation: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**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.

**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

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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.

**Aspiration toxicity**

Not classified based on available information.

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**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).

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### SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

- Disposal of residual product : Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.  
 Do not dispose of waste into sewer.  
 Do not contaminate ponds, waterways or ditches with chemical or used container.
- 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 : 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, Subpt 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)
4,4'-methylenediphenyl diisocyanate	101-68-8	5000	*

\*: 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 311/312 Hazards** : Acute Health Hazard  
 Chronic Health Hazard

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

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

polymethylenepolyphenylene isocyanate	9016-87-9	50 - 70 %
4,4'-methylenediphenyl diisocyanate	101-68-8	30 - 50 %

**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'-methylenediphenyl diisocyanate	101-68-8	50 - 70 %
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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 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

4,4'-methylenediphenyl diisocyanate	101-68-8	50 - 70 %
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**US State Regulations**

**US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)**

4,4'-methylenediphenyl diisocyanate	101-68-8
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**US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)**

polymethylenepolyphenylene isocyanate	9016-87-9
4,4'-methylenediphenyl diisocyanate	101-68-8

**US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)**

polymethylenepolyphenylene isocyanate	9016-87-9
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:**

DSL : All components of this product are on the Canadian DSL

TSCA : On TSCA 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

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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.