

**JM Closed-cell Spray Polyurethane Foam (cc SPF) – Component B
(USA)**

Version 2.5

Revision Date 08/15/2019

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Trade name : JM Closed Cell B ND, JM Corbond® III 2.8 Closed-cell SPF, JM Corbond® III Closed-cell SPF, JM Corbond® IIIe Closed-cell SPF, JM MCS+ Closed-cell SPF

Manufacturer or supplier's details

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

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)**Specific target organ toxicity : Category 2
- repeated exposure**GHS label elements**

Hazard pictograms :



Signal word : Warning

Hazard statements : H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements : **Prevention:**
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

Response:
P314 Get medical advice/ attention if you feel unwell.

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

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Additional Labelling

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 4.02 %

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical name	CAS-No.	Concentration (%)
1,1,1,3,3-pentafluoropropane (HFC-245fa)	460-73-1	>= 5 - < 10
tris(2-chloro-1-methylethyl) phosphate	13674-84-5	>= 1 - < 5
triethyl phosphate	78-40-0	>= 1 - < 5
trans-1,2-dichloroethylene	156-60-5	>= 1 - < 5
diethylmethylbenzenediamine	68479-98-1	>= 1 - < 5

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.
If breathing has stopped, apply artificial respiration.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- 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.
Wash contaminated clothing before re-use.
Call a physician if irritation develops or persists.
Take off all contaminated clothing immediately.
- 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.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Do NOT induce vomiting.
Rinse mouth with water.
Never give anything by mouth to an unconscious person.
Keep respiratory tract clear.
Obtain medical attention.
- Most important symptoms and effects, both acute and delayed : None known.

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SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water mist
Dry powder
Carbon dioxide (CO₂)
Foam
- Unsuitable extinguishing media : High volume water jet
- Hazardous combustion products : carbon oxides
nitrogen oxides
phosphorus oxides
halogenated compounds
- Specific extinguishing methods : 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 : Immediately evacuate personnel to safe areas.
Keep people away from and upwind of spill/leak.
Ensure adequate ventilation.
Use personal protective equipment.
- 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 : 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.
Dispose of rinse water in accordance with local and national regulations.

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- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.
- Recommended storage temperature : 10 - 24 °C
- Storage period : 6 Months
- Further information on storage stability : Stable at normal ambient temperature and pressure.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
1,1,1,3,3-pentafluoropropane (HFC-245fa)	460-73-1	TWA	300 ppm	US WEEL
triethyl phosphate	78-40-0	TWA	7.45 mg/m ³	US WEEL
trans-1,2-dichloroethylene	156-60-5	TWA	200 ppm	ACGIH

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 : When spray applying: use a NIOSH-approved respirator with an Assigned Protection Factor (APF) of at least 1000, such as a supplied air respirator. Non-spray applications: select a NIOSH-approved respirator based on actual or potential airborne concentrations and in accordance with regulatory standards and/or industrial regulations.
- Hand protection
Material : Impervious gloves
- Remarks : Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Eye protection : Tightly fitting safety goggles
- Skin and body protection : Chemical resistant apron

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Full protective suit
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

Color : various, lavender, tan

Odor : No data available

Odor 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 : > 94 °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 : No data available

Relative vapour density : No data available

Relative density : No data available

Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Auto-ignition temperature : No data available

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Thermal decomposition : No data available

Viscosity
Viscosity, dynamic : 650 mPa.s (24 °C)

Viscosity, kinematic : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Contact with isocyanates will cause polymerization.
Stable under recommended storage conditions.

Conditions to avoid : Protect from frost, heat and sunlight.

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : carbon oxides
nitrogen oxides
phosphorus oxides
halogenated compounds

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

Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate : > 40 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Acute toxicity**Components:****tris(2-chloro-1-methylethyl) phosphate:**

Acute oral toxicity : LD50 (Rat): 632 mg/kg

Acute inhalation toxicity : LC50 (Rat): 4.6 mg/l
Exposure time: 4 h

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Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Acute toxicity**triethyl phosphate:**Acute oral toxicity : LD50 : 500 mg/kg
Method: Converted acute toxicity point estimate**Acute toxicity****trans-1,2-dichloroethylene:**Acute oral toxicity : LD50 (Rat): 7,902 mg/kg
LD50 (Mouse): 2,122 mg/kgAcute inhalation toxicity : LC50 (Rat): 96 mg/l
Exposure time: 4 h

Acute dermal toxicity : LD0 (Rabbit): > 5,000 mg/kg

Acute toxicity**diethylmethybenzenediamine:**

Acute oral toxicity : LD50 (Rat): 472 mg/kg

Acute inhalation toxicity : LC50 (Rat): 2.45 mg/l
Exposure time: 1 h
LC50 (Rat): > 2.45 mg/l
Exposure time: 1 h

Acute dermal toxicity : LD50 (Rabbit): > 1,000 mg/kg

Skin corrosion/irritation**Components:****tris(2-chloro-1-methylethyl) phosphate:**Species: Rabbit
Result: No skin irritation**Skin corrosion/irritation****triethyl phosphate:**Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation**Skin corrosion/irritation****diethylmethylbenzenediamine:**Species: Rabbit
Exposure time: 4 h
Result: No skin irritation

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Serious eye damage/eye irritation**Components:****tris(2-chloro-1-methylethyl) phosphate:**

Species: Rabbit

Result: Mild eye irritation

Exposure time: 24 h

Method: Draize Test

Serious eye damage/eye irritation**triethyl phosphate:**

Species: Rabbit

Result: Eye irritation

Method: OECD Test Guideline 405

Serious eye damage/eye irritation**trans-1,2-dichloroethylene:**

Species: Rabbit

Result: Eye irritation

Serious eye damage/eye irritation**diethylmethylenediamine:**

Species: Rabbit

Result: irritating

Respiratory or skin sensitisation**Components:****tris(2-chloro-1-methylethyl) phosphate:**

Result: Does not cause skin sensitisation.

Germ cell mutagenicity**Components:****tris(2-chloro-1-methylethyl) phosphate:**Germ cell mutagenicity-
Assessment : Not mutagenic in Ames Test**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.

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Reproductive toxicity**Components:****tris(2-chloro-1-methylethyl) phosphate:**Effects on fertility : Species: Rat, male
Application Route: InhalationReproductive toxicity - : Experiments have shown reproductive toxicity effects in male
Assessment and female laboratory animals.
Did not show teratogenic effects in animal experiments.**STOT - repeated exposure****Components:****diethylmethylbenzenediamine:**

Assessment: May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity**Components:****tris(2-chloro-1-methylethyl) phosphate:**Species: Rat, male
NOAEL: 36 mg/kg
Application Route: Oral
Exposure time: 90 d**diethylmethylbenzenediamine:**Species: Rabbit, female
NOAEL: 1 mg/kg
Application Route: Skin contactSpecies: Rat
NOAEL: 10 mg/l
Application Route: inhalation (gas)**Further information****Product:**

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****tris(2-chloro-1-methylethyl) phosphate:**Toxicity to algae : EC50 (Scenedesmus capricornutum (fresh water algae)): 47
mg/lToxicity to daphnia and other : NOEC (Daphnia (water flea)): 32 mg/l
aquatic invertebrates

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(Chronic toxicity)

triethyl phosphate:

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): 901 mg/l

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 31.6 mg/l
aquatic invertebrates : Exposure time: 21 d
(Chronic toxicity) : Method: OECD Test Guideline 211**trans-1,2-dichloroethylene:**Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 140 mg/l
Exposure time: 96 hToxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 220 mg/l
aquatic invertebrates : Exposure time: 48 hToxicity to algae : EC50 (Selenastrum capricornutum (green algae)): 798 mg/l
Exposure time: 96 hEC50 (Skeletonema costatum (marine diatom)): 712 mg/l
Exposure time: 96 h**Persistence and degradability****Components:****tris(2-chloro-1-methylethyl) phosphate:**

Biodegradability : Result: Not readily biodegradable.

trans-1,2-dichloroethylene:Biodegradability : Result: Not readily biodegradable.
Biodegradation: 8 %
Exposure time: 28 d**Bioaccumulative potential****Components:****tris(2-chloro-1-methylethyl) phosphate:**Partition coefficient: n- : log Pow: 2.68
octanol/water**triethyl phosphate:**Partition coefficient: n- : log Pow: 1.11
octanol/water : Method: Regulation (EC) No. 440/2008, Annex, A.8**trans-1,2-dichloroethylene:**Partition coefficient: n- : log Pow: 2.06
octanol/water

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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
chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**International transport regulations**

Land transport

USDOT: 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 : No substances are subject to TSCA

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12(b) Export Notification (40 CFR 707, Subpart D)

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)
trans-1,2-dichloroethylene	156-60-5	1000	*

*: 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 : Specific target organ toxicity (single or repeated exposure)

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

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

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

ethane-1,2-diol	107-21-1
diethylene glycol	111-46-6

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):

ethane-1,2-diol	107-21-1
diethylene glycol	111-46-6

California Safe Drinking Water and Toxic Enforcement Act (Proposition 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 : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

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.