

Section 1 - Product and Company Identification

Hazard Label DANGER label

Company Information

Johns Manville
Roofing Systems
P.O. Box 5108
Denver, CO 80127 USA

Telephone: 303-978-2000 8:00AM-5:00PM M-F
Internet Address: <http://www.jm.com>
Emergency: 800-424-9300 (Chemtrec, In English)

Trade Names: JM PVC Sealant, Clear

Use: JM PVC Sealant is a liquid thermoplastic compound placed at the edge of JM PVC Membrane seams after the membrane has been welded to itself or to JM PVC-Coated Metal.

Section 2 - Hazards Identification

Emergency Overview

DANGER: Extremely flammable liquid and vapor. Vapor may cause flash fire. Use water spray to cool materials in or near a fire. Fire may be difficult to extinguish. Vapors may travel, and can be ignited by a remote source.

Inhalation

Inhalation of vapors or mists may cause irritation of the upper respiratory tract or central nervous system depression.

Skin

Drying of skin, dermatitis, and blistering may occur following prolonged exposures.

Ingestion

This product is not intended to be ingested under normal conditions of use. May be harmful if swallowed. May cause gastrointestinal irritation and disturbances. May cause effects similar to those for inhalation exposure. Aspiration into the lungs may cause lung inflammation and other lung injury.

Eyes

Irritation, redness, and burning in eyes may occur.

Primary Routes of Entry (Exposure)

Inhalation, skin, and eye contact.

Target Organs

Skin, eye, lungs, central nervous system (CNS), respiratory system, kidney, liver.

Medical Conditions Aggravated by Exposure

Pre-existing eye, skin, respiratory, central nervous system (CNS), liver and kidney diseases or conditions.

Section 3 - Composition/Information on Ingredients

CAS #	Component	Percent
109-99-9	Tetrahydrofuran	70-74
Trade Secret	Vinyl polymer (non-toxic)	15-19
108-94-1	Cyclohexanone	8-12
Trade Secret	Plasticizer (non-toxic)	1-4

General Product Description

Clear liquid

Section 4 - First Aid Measures

First Aid: Inhalation

If the affected person is having difficulty breathing, administer oxygen or apply artificial respiration and immediately contact a medical professional.

First Aid: Skin

Remove contaminated clothing. Wash exposed areas with soap and water. If irritation develops or persists, seek medical attention. Launder contaminated clothing before reuse.

First Aid: Ingestion

Product is not intended to be ingested or eaten. If this product is ingested, do not induce vomiting and seek medical attention immediately.

First Aid: Eyes

Flush eyes with large amounts of water until irritation subsides. If irritation persists, seek medical attention.

First Aid: Notes to Physician

Treatment for inhalation, skin contact, or ingestion should be symptomatic. Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias.

Section 5 - Fire Fighting Measures**Flash Point:** -14.4°C/6°F**Upper Flammable Limit (UFL):** 11.8**Auto Ignition:** Not determined**Rate of Burning:** Not determined**General Fire Hazards**

DANGER: EXTREMELY FLAMMABLE liquid and vapor.

Keep away from heat, sparks, and flame. Material is highly volatile and readily gives off vapors which are heavier than air and may travel along the ground or be moved by ventilation and ignited by pilot lights, other flames, sparks heaters, smoking, electric motors, static discharge, or other ignition sources at locations distant from material handling point. Keep container closed. Use with adequate ventilation.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide, halogenated hydrocarbons, nitrogen oxides, and various hydrocarbons.

Extinguishing Media

Carbon dioxide (CO₂), dry chemical.

Fire Fighting Equipment/Instructions

Use NIOSH-approved self-contained breathing apparatus operating in the pressure demand mode and full fire fighting protective clothing. Avoid inhalation of vapors.

NFPA Ratings: Health = 2 Fire = 3 Reactivity = 1

Section 6 - Accidental Release Measures**Containment Procedures**

Remove all sources of ignition. Evacuate and ventilate spill area. Dam spill area with sand, earth, or other suitable absorbent. Prevent entry of material into sewers, other water sources, or land areas. Wear full protective clothing and respiratory protection during clean-up as required to maintain exposures below the applicable exposure limit. Shovel absorbed material into containers in well-ventilated area.

Clean-Up Procedures

Place in closable container for disposal.

Section 7 - Handling and Storage**Handling Procedures**

Use protective equipment as described in Section 8 of this safety data sheet when handling uncontained material. Handle in accordance with good industrial hygiene and safety practices.

Storage Procedures

Warehouse storage should be in accordance with package directions, if any. Product should be kept in a cool and dry area in original packaging. Do not freeze.

Section 8 - Exposure Controls / Personal Protection**Exposure Guidelines****A: General Product Information**

Protective equipment should be provided as necessary to prevent inhalation of vapors, prolonged skin contact, and to keep exposure levels below the applicable exposure limits.

B: Component Exposure Limits**Tetrahydrofuran (109-99-9)**

OSHA: 200 ppm TWA; 590 mg/m³ TWA

200 ppm TWA; 590 mg/m³ TWA

ACGIH: 50 ppm TWA

100 ppm STEL

Skin - potential significant contribution to overall exposure by the cutaneous route

Cyclohexanone (108-94-1)OSHA: 50 ppm TWA; 200 mg/m³ TWA
25 ppm TWA; 100 mg/m³ TWAACGIH: 20 ppm TWA
50 ppm STEL

Skin - potential significant contribution to overall exposure by the cutaneous route

PERSONAL PROTECTIVE EQUIPMENT**Personal Protective Equipment: Eyes/Face**

Safety glasses with sideshields, chemical goggles, or a face shield is required.

Personal Protective Equipment: Skin

Impervious gloves such as nitrile rubber should be used to help prevent excessive skin contact.

Personal Protective Equipment: Respiratory

A NIOSH approved respirator must be used if vapor concentrations exceed exposure limits.

Ventilation

Local exhaust or general dilution ventilation may be required to maintain exposures below the applicable exposure limits. The need for ventilation systems should be evaluated by a professional industrial hygienist, while the design of specific ventilation systems should be conducted by a professional engineer.

Personal Protective Equipment: General

Protective equipment should be provided as necessary to prevent irritation of the throat, eyes, and skin, and to keep exposures below the applicable exposure limits identified in Section 8.

Section 9 - Physical & Chemical Properties

Appearance:	Clear	Odor:	Chemical odor
Physical State:	Liquid	pH:	Not determined
Vapor Pressure:	143 mm Hg	Vapor Density:	>1
Boiling Point:	151°F (66.1°C)	Melting Point:	Not determined
Solubility (H₂O):	Not determined	Specific Gravity:	0.94 @ 77°F
Freezing Point:	Not determined	Bulk Density:	7.80 lb/gal @ 77°F
Percent Volatile:	81%	VOC:	757.3 g/L (6.32 lb./gal)

Section 10 - Stability & Reactivity Information**Stability**

These products are not reactive.

Stability: Conditions to Avoid

Keep away from ignition sources. Do not freeze. Do not thin.

Incompatibility

Strong acids, alkalis, and oxidizing agents

Hazardous Decomposition

May form carbon dioxide, carbon monoxide, halogenated hydrocarbons, nitrogen oxides, various hydrocarbons.

Hazardous Polymerization

Product can undergo hazardous polymerization in the presence of cationic initiators such as Lewis acids or strong proton acids.

Section 11 - Toxicological Information**Acute Toxicity****A: General Product Information**

Vapors from this product may cause eye and upper respiratory irritation, dry throat and mouth, nausea, headache, dizziness, drowsiness, and coma in extreme cases. Prolonged exposures may lead to liver and kidney injury.

B: Component Analysis - LD50/LC50**Tetrahydrofuran (109-99-9)**

Inhalation LC50 Rat: 53.9 mg/L/4H; Inhalation LC50 Rat:180 mg/L/1H; Oral LD50 Rat:1650 mg/kg

Cyclohexanone (108-94-1)

Inhalation LC50 Rat: 10.7 mg/L/4H; Inhalation LC50 Rat:8000 ppm/4H; Oral LD50 Rat:800 mg/kg; Dermal LD50 Rabbit:948 mg/kg

Component Carcinogenicity

Tetrahydrofuran (109-99-9)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Cyclohexanone (108-94-1)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

IARC: Group 3 - Not Classifiable (IARC Monograph 71 [1999], Monograph 47 [1989])

Chronic Toxicity

Tetrahydrofuran: Prolonged, excessive exposures to vapors of tetrahydrofuran may produce liver and kidney injury. Liver and kidney damage has been reported in experimental animals at high exposure levels. These effects may be attributable to peroxide impurities. Recent studies performed in intensely exposed dogs, cats, rats, mice and rabbits do not show evidence of liver or kidney damage. People exposed to high levels of Tetrahydrofuran had elevated circulating liver enzymes and complained of nausea, tinnitus, and occipital headache.

Section 12 - Ecological Information

Ecotoxicity

A: General Product Information

No data available for this product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Tetrahydrofuran (109-99-9)

96 Hr LC50 Pimephales promelas: 2160 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 2700-3600 mg/L [static]
24 Hr EC50 Daphnia magna: >10000 mg/L

Cyclohexanone (108-94-1)

96 Hr LC50 Pimephales promelas: 527.0 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 44.0 mg/L; 96 Hr LC50 Pimephales promelas: 8.9 mg/L

96 Hr EC50 Chlorella vulgaris: 20 mg/L

5 min EC50 Photobacterium phosphoreum: 25 mg/L; 10 min EC50 Photobacterium phosphoreum: 21.3 mg/L; 5 min EC50

Photobacterium phosphoreum: 18.5 mg/L

48 Hr EC50 water flea: 820 mg/L; 48 Hr EC50 Daphnia magna: 800 mg/L

Section 13 - Disposal Considerations

US EPA Waste Number & Descriptions

A: General Product Information

This product is classified an ignitable hazardous waste by the Resource Conservation and Recovery Act (RCRA; 40 CFR 261: Waste # D001). Dispose of spilled material in accordance with federal, state, and local regulations in a hazardous waste facility. Empty containers must be handled with care due to product residue. Do not heat or cut empty containers with electric or gas torch. If you are unsure of the regulations, contact your local Public Health Department, or the local office of the Environmental Protection Agency (EPA).

B: Component Waste Numbers

Tetrahydrofuran (109-99-9)

RCRA: waste number U213 (Ignitable waste)

Cyclohexanone (108-94-1)

RCRA: waste number U057 (Ignitable waste)

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

Section 14 - Transport Information

International Transport Regulations

DOT:

UN1993, Flammable Liquid, N.O.S., 3, PG II

IATA & IMDG: Contact JM Product Stewardship

Section 15 - Regulatory Information
--

US Federal Regulations**A: General Product Information**

SARA 311 Status. The following SARA 311 designations apply to this product: Immediate (acute) health hazard. Delayed (chronic) health hazard. Fire hazard.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Tetrahydrofuran (109-99-9)

CERCLA: 1000 lb final RQ; 454 kg final RQ

Cyclohexanone (108-94-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

State Regulations**A: General Product Information**

Other state regulations may apply. Check individual state requirements.

Product is not approved for sale or use in any jurisdiction that restricts VOCs in roofing adhesives & sealants.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Tetrahydrofuran	109-99-9	Yes	No	Yes	Yes	Yes	Yes
Cyclohexanone	108-94-1	Yes	No	Yes	Yes	Yes	Yes

A: TSCA Status

This product and its components are listed on the TSCA 8(b) inventory.

The following components listed in this product are listed on the TSCA Export Notification 12(b) list.

TSCA 12(b)

Component	CAS	TSCA 12 (b)
Tetrahydrofuran	109-99-9	Yes

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Tetrahydrofuran	109-99-9	Yes	Yes	Yes
Cyclohexanone	108-94-1	Yes	Yes	Yes

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Tetrahydrofuran	109-99-9	1 %
Cyclohexanone	108-94-1	0.1 %

WHMIS Classification

Controlled Product Classification: B2 D2A

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations. This SDS contains all the information required by the Controlled Products Regulations.

Section 16 - Other Information

Other Information

Prepared for:
Johns Manville
Roofing Systems

P. O. Box 5108
Denver, CO USA 80217-5108

Prepared by:
Johns Manville Technical Center
P.O. Box 625005
Littleton, CO USA 80162-5005

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Date	MSDS #	Reason
08/01/00	3206-1.0000	New MSDS authoring system.
03/18/03	3206-1.0101	Section 2: Updated ingredients to include vinyl polymer and plasticizer. Sect. 15: TSCA 12b, tetrahydrofuran has been de-listed. Added NFPA/HMIS ratings.
05/20/03	3206-1.0002	Sect. 15 Add SARA 311 info.; other minor edits.
10/22/03	3206-1.0003	Update Section 8, Cyclohexanone; Update Section 15, State data, Tetrahydrofuran and Cyclohexanone
02/28/05	3206-1.0004	Update Section 14 for transportation information; Supplier edits and regulatory updates in all sections.
08/18/08	3206-1.0005	Regulatory update. SDS updated to GHS format.

End of Sheet 3206