



Section 1 - Chemical Product and Company Identification

Product Name PVC Adhesives

CAS# Mixture/None Assigned

Generic Name Adhesive

Formula Mixture

Chemical Name: Mixture

Hazard Label SOL-XF

Manufacturer Information

Johns Manville

Performance Materials Division

P.O. Box 5108

Denver, CO 80127-5108

Telephone: 303-978-2000

Internet Address: <http://www.jm.com>

Emergency: 800-424-9300 (Chemtrec)

Trade Names: Ceel-Co® Perma-Weld Adhesive, Clear or White; Zeston® Perma-Weld Adhesive, Clear or White

Section 2 - Composition / Information on Ingredients

CAS #	Component	Percent
109-99-9	Tetrahydrofuran	45-60
9003-22-9	Vinyl chloride-Vinyl acetate copolymer	20-30
78-93-3	Methyl ethyl ketone	20-30
7732-18-5	Water	<1
67-64-1	Acetone	<1
108-05-4	Vinyl acetate	0.1-5
13463-67-7	Titanium dioxide (colorant)*	0-5
67-63-0	Isopropyl alcohol	<1

Additional Component Information

* In white adhesive only.

Section 3 - Hazards Identification

Emergency Overview

APPEARANCE AND ODOR: Clear or white liquid. Solvent odor.

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 of vapors may cause upper respiratory irritation or central nervous system depression - remove affected individuals to fresh air.

Potential Health Effects

Summary

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.

Inhalation

Irritation of the upper respiratory tract, headache, nausea, dizziness, weakness, loss of coordination, slow breathing, narcosis (drowsiness), unconsciousness, and asphyxiation may occur in extreme exposures.

Skin

Irritation, dermatitis (skin rash or redness) may occur.

Absorption

Can pass through skin and cause symptoms similar to those resulting from swallowing or inhalation.

Ingestion

This product is not intended to be ingested or eaten under normal conditions of use. If ingested, it may cause gastrointestinal (GI) irritation, nausea, vomiting, and diarrhea. Aspiration of this material into the lungs due, for example, to vomiting, can cause chemical pneumonitis which can be harmful or fatal.

Eyes

Irritation may occur, with possible watering of the eyes, and blurred vision.

Target Organs

Upper respiratory passages, central nervous system, skin, eyes, liver, kidney.

Primary Routes of Entry (Exposure)

Inhalation, skin, and eye contact.

Medical Conditions Aggravated by Exposure

Pre-existing chronic eye, skin, respiratory, liver, or kidney diseases or conditions

Section 4 - First Aid Measures

First Aid: Inhalation

Remove to fresh air.

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. Do not make an unconscious person vomit.

First Aid: Eyes

Flush eyes with large amounts of water for 5-15 minutes. If irritation develops, or persists, seek medical attention.

First Aid: Notes to Physician

Treatment for inhalation of vapors should be symptomatic with supportive therapy. Skin and eye contact may be treated by washing the exposed area. Removal from exposure will generally result in complete recovery.

Section 5 - Fire Fighting Measures

Flash Point: -14.4°C/6°F

Upper Flammable Limit (UFL): Not determined.

Auto Ignition: Not determined

Rate of Burning: Not determined

Method Used: TCC

Lower Flammable Limit (LFL): 1.9%

Flammability Classification: Not determined

General Fire Hazards

EXTREMELY FLAMMABLE liquid and vapor. May cause flash fire. Keep away from heat, sparks and flame. Keep container closed. Use with adequate ventilation. Containers exposed to elevated temperatures (such as heat or flames) may develop pressure build-up and rupture. Vapors may travel, and can be ignited by a remote source.

"Empty" container warning: "Empty" containers retain residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and death.

Extinguishing Media

Dry chemical, foam, carbon dioxide.

Water spray or fog may be used to cool materials in or near fire.

Water may be an ineffective extinguishing medium.

Fire Fighting Equipment/Instructions

Firefighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Firefighters should avoid inhaling any combustion products.

NFPA Ratings for Health - Flammability - Reactivity are: 2 - 3 - 1 (based on Tetrahydrofuran)

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

No additional information available.

Section 7 - Handling and Storage

Handling Procedures

Use protective equipment as described in Section 8 of this material safety data sheet when handling uncontained material. Keep this material and vapors from this material away from ignition sources, such as heat, sparks, pilot lights, static electricity, and open flames. Containers exposed to elevated temperatures (such as heat or flames) may develop pressure build-up and rupture. Keep containers sealed when not in use and clean spills promptly to reduce air concentrations and floor hazards.

Storage Procedures

No additional information available.

Section 8 - Exposure Controls / Personal Protection

Exposure Guidelines

A: General Product Information

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

B: Component Exposure Limits

Tetrahydrofuran (109-99-9)

ACGIH: 200 ppm TWA
250 ppm STEL
OSHA: 200 ppm TWA; 590 mg/m3 TWA
250 ppm STEL; 735 mg/m3 STEL

Methyl ethyl ketone (78-93-3)

ACGIH: 200 ppm TWA
300 ppm STEL
OSHA: 200 ppm TWA; 590 mg/m3 TWA
300 ppm STEL; 885 mg/m3 STEL

Acetone (67-64-1)

ACGIH: 500 ppm TWA
750 ppm STEL
OSHA: 750 ppm TWA; 1800 mg/m3 TWA
1000 ppm STEL; 2400 mg/m3 STEL (The acetone STEL does not apply to the cellulose acetate fiber industry. It is in effect for all other sectors)

Vinyl acetate (108-05-4)

ACGIH: 10 ppm TWA
15 ppm STEL
OSHA: 10 ppm TWA; 30 mg/m3 TWA
20 ppm STEL; 60 mg/m3 STEL

Titanium dioxide (colorant)* (13463-67-7)

ACGIH: 10 mg/m3 TWA
OSHA: 10 mg/m3 TWA (total dust)

Isopropyl alcohol (67-63-0)

ACGIH: 400 ppm TWA
500 ppm STEL
OSHA: 400 ppm TWA; 980 mg/m3 TWA
500 ppm STEL; 1225 mg/m3 STEL

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Safety glasses with sideshields or chemical splash goggles are recommended to prevent splashing of material in eyes.

Personal Protective Equipment: Skin

Solvent-resistant gloves are recommended.

Personal Protective Equipment: Respiratory

If vapor levels are above the applicable exposure limits, a NIOSH-approved organic vapor respirator must be provided and worn.

Ventilation

Local exhaust ventilation should be provided at areas of use to remove gases & vapors from work area. General dilution ventilation should be provided as necessary to keep gases & vapors below the applicable exposure limits and guidelines. 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

An apron or coveralls impervious to chemicals can be used to protect clothing. Wash exposed skin after contact, before breaks and meals, and at end of work period.

Section 9 - Physical & Chemical Properties

<p>Appearance: Clear or white</p> <p>Physical State: liquid</p> <p>Vapor Pressure: Not determined</p> <p>Boiling Point: 62.8-68.3°C/145-155°F</p> <p>Solubility (H2O): Not soluble</p> <p>Freezing Point: Not determined</p> <p>Viscosity: Not determined</p> <p>VOC: 726.3 g/L (clear), 720.0 g/L (white)</p>	<p>Odor: solvent odor</p> <p>pH: Not determined</p> <p>Vapor Density: >1</p> <p>Melting Point: Not determined</p> <p>Specific Gravity: .949-.974</p> <p>Evaporation Rate: Faster than ether</p> <p>Percent Volatile: 79%</p>
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Section 10 - Chemical Stability & Reactivity Information

Chemical Stability

This is a stable material. This product is not reactive.

Chemical Stability: Conditions to Avoid

Keep away from heat, ignition sources and incompatible materials.

Incompatibility

This product may react with strong oxidizing agents.

Hazardous Decomposition

Carbon monoxide, carbon dioxide, hydrogen chloride, and other partially oxidized hydrocarbons.

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information

Acute Toxicity**A: General Product Information**

Vapors from this product may cause irritation of the eyes, and upper respiratory tract including the nose, mouth, and throat. Inhalation of vapors may cause headache, numbness of the fingers and arms, incoordination, weakness, slowed respiration (breathing), and narcosis (drowsiness). Prolonged skin contact may produce irritation, and dermatitis and common solvent defatting effect. Eye contact may result in irritation of the eyes, and lacrimation (watering).

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

Inhalation LC50 Rat: 21000 ppm/3H

Oral LD50 Rat: 1650 mg/kg

Methyl ethyl ketone (78-93-3)

Inhalation LC50 Rat: 23500 mg/m³/8H

Inhalation LC50 Mouse: 32 gm/m³/4H

Oral LD50 Rat: 2737 mg/kg

Oral LD50 Mouse: 4050 mg/kg

Dermal LD50 Rabbit: 6480 mg/kg

Acetone (67-64-1)

Inhalation LC50 Rat: 50100 mg/m3/8H
Inhalation LC50 Mouse: 44 gm/m3/4H
Oral LD50 Rat: 5800 mg/kg
Oral LD50 Mouse: 3 gm/kg

Vinyl acetate (108-05-4)

Inhalation LC50 Rat: 11400 mg/m3/4H
Inhalation LC50 Mouse: 1550 ppm/4H
Oral LD50 Rat: 2920 mg/kg
Oral LD50 Mouse: 1613 mg/kg
Dermal LD50 Rabbit: 2335 mg/kg

Isopropyl alcohol (67-63-0)

Inhalation LC50 Rat: 16000 ppm/8H
Oral LD50 Rat: 5045 mg/kg
Oral LD50 Mouse: 3600 mg/kg
Dermal LD50 Rabbit: 12800 mg/kg

Carcinogenicity

A: General Product Information

Tetrahydrofuran was associated with an increase in liver cancer in female mice and a slight increase in kidney cancer in male rats. However, in the same study, it had no effect on cancer incidence in male mice or in female rats. The relevance of this finding to humans is uncertain.

B: Component Carcinogenicity

Vinyl chloride-Vinyl acetate copolymer (9003-22-9)

IARC: Supplement 7, 1987; Monograph 19, 1979 (Group 3 (not classifiable))

Acetone (67-64-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Vinyl acetate (108-05-4)

ACGIH: A3 - Animal Carcinogen

IARC: Monograph 63, 1995 (Group 2B (possibly carcinogenic to humans))

Titanium dioxide (colorant)* (13463-67-7)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Monograph 47, 1989 (Group 3 (not classifiable))

Isopropyl alcohol (67-63-0)

IARC: Monograph 71, 1999; Supplement 7, 1987; Monograph 15, 1977 (Group 3 (not classifiable))

Chronic Toxicity

Prolonged, excessive exposures to vapors of this product may produce liver and kidney injury. Methyl ethyl ketone has shown possible reproductive risks in one animal study; a second study was negative. Individuals exposed to high levels of Tetrahydrofuran have elevated circulating liver enzymes and have 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 fathead minnow: 2160 mg/L (flow-through)

Methyl ethyl ketone (78-93-3)

96 Hr LC50 fathead minnow: 3220 mg/L (flow-through)
96 Hr LC50 bluegill: 1690 mg/L
5 min EC50 Photobacterium phosphoreum: 3426 mg/L
30 min EC50 Photobacterium phosphoreum: 3403 mg/L
48 Hr EC50 water flea: 520 mg/L

Acetone (67-64-1)

96 Hr LC50 rainbow trout: 5540 mg/L (Static)
96 Hr LC50 fathead minnow: 6210 mg/L (flow-through)
96 Hr LC50 bluegill: 8300 mg/L (Static)
48 Hr LC50 water flea: 0.0039 mg/L
48 Hr EC50 water flea: 12700 mg/L (Static)

Vinyl acetate (108-05-4)

96 Hr LC50 fathead minnow: 31.0 mg/L
96 Hr LC50 bluegill: 31.0 mg/L
96 Hr LC50 goldfish: 31.0 mg/L
24 Hr EC50 water flea: 52.0 mg/L

Isopropyl alcohol (67-63-0)

96 Hr LC50 fathead minnow (29 days old): 94900 mg/L (flow-through)
96 Hr LC50 fathead minnow (31 days old): 61200 mg/L (flow-through)
5 min EC50 Photobacterium phosphoreum: 35390 mg/L

Section 13 - Disposal Considerations

US EPA Waste Number & Descriptions

A: General Product Information

Wastes are hazardous as defined by the Resource Conservation and Recovery Act (RCRA; 40 CFR 261). Dispose of waste material in accordance with federal, state, and local regulations in a permitted hazardous waste management facility. Incineration is the preferred method of disposal. Empty containers must be handled with care due to product residue. Decontaminate empty containers prior to disposal. 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)

Methyl ethyl ketone (78-93-3)

RCRA: waste number U159 (Ignitable waste, Toxic waste)
200.0 mg/L regulatory level; waste number D035

Acetone (67-64-1)

RCRA: waste number U002 (Ignitable waste)

Disposal Instructions

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

Section 14 - Transportation Information

Shipping Name: Adhesive, containing flammable liquid.

UN/NA #: UN1133 **Hazard Class:** 3 **Packing Group:** II

Required Label(s): FLAMMABLE LIQUID

Additional Info.: The DOT classification listed above may not always apply to shipments of this product. Consult the bill of lading for appropriate transport information.

Section 15 - Regulatory Information
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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

Methyl ethyl ketone (78-93-3)

SARA 313: 1.0 percent de minimis concentration
CERCLA: 5000 lb final RQ; 2270 kg final RQ

Acetone (67-64-1)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

Vinyl acetate (108-05-4)

SARA 302: 1,000 lb TPQ
SARA 313: 0.1 percent de minimis concentration
CERCLA: 5000 lb final RQ; 2270 kg final RQ

State Regulations**A: General Product Information**

No information available for the product.

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
Methyl ethyl ketone	78-93-3	Yes	No	Yes	Yes	Yes	Yes
Acetone	67-64-1	Yes	No	Yes	Yes	Yes	Yes
Vinyl acetate	108-05-4	Yes	No	Yes	Yes	Yes	Yes
Titanium dioxide (colorant)*	13463-67-7	No	No	Yes	Yes	Yes	Yes
Isopropyl alcohol	67-63-0	Yes	No	Yes	Yes	Yes	Yes

Other Regulatory Information**A: General Product Information**

No information available for the product.

B: 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)
Acetone	67-64-1	Yes

C: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Tetrahydrofuran	109-99-9	Yes	Yes	Yes
Methyl ethyl ketone	78-93-3	Yes	Yes	Yes
Vinyl chloride-Vinyl acetate copolymer	9003-22-9	Yes	Yes	No
Acetone	67-64-1	Yes	Yes	Yes
Water	7732-18-5	Yes	Yes	Yes
Vinyl acetate	108-05-4	Yes	Yes	Yes
Titanium dioxide (colorant)*	13463-67-7	Yes	Yes	Yes
Isopropyl alcohol	67-63-0	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%; English Item 1524; French Item 1593
Methyl ethyl ketone	78-93-3	1%; English Item 1045; French Item 1133
Acetone	67-64-1	1%; English Item 10; French Item 41
Vinyl acetate	108-05-4	1%; English Item 1683; French Item 35

Section 16 - Other Information**Other Information**

Prepared for:
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As of the date of preparation of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state law(s). However, no warranty or representation with respect to such information is intended or given.

Date	MSDS #	Reason
08/01/00	2006-1.0000	New MSDS authoring system.
10/27/00	2006-1.0100	LOLI update, minor. Also transportation update (Sect. 14).
11/17/00	2006-1.0101	Delete "300" from trade names (Section 1.)
06/18/02	2006-1.0101	Sect. 15: Updated TSCA 12B, Tetrahydrofuran no longer listed. Other minor edits.
06/30/03	2009-1.0102	Sect. 1, 2, 6, 9. Minor adjustments to composition. New JM division name (Performance Mtrls.). Changed Ceel-Tite to Ceel-Co Perma-Weld.

This is the end of MSDS # 2006