

Material Safety Data Sheet

VERSIFLEX PVC BONDING ADHESIVE

MSDS No. 309771

Date of Preparation: 07/26/2010

Revision: 008

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: VersiFlex PVC Bonding Adhesive
Chemical Formula: Nitrile Adhesive Mixture
General Use: Contact Bonding Adhesive
Manufacturer: Versico, 1285 Ritner Highway, Carlisle, PA, 17013, Phone: 800-992-7663
 Emergency Phone Number: CHEMTREC(USA): 800-424-9300

Section 2 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Danger – Highly flammable liquid and vapor Warning – Causes skin irritation Warning – Causes serious eye irritation Danger – May be fatal if swallowed and enters airways Danger – May damage fertility or the unborn child Warning – May cause an allergic skin reaction Warning – Suspected of causing genetic defects (skin) Warning – May cause drowsiness and dizziness Warning – May cause damage to organs (liver, kidney, ear) through prolonged or repeated exposure	<table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">HMIS</td> </tr> <tr> <td style="text-align: center;">H</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">F</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">R</td> <td style="text-align: center;">0</td> </tr> <tr> <td colspan="2">PPE†</td> </tr> <tr> <td colspan="2">†Sec. 8</td> </tr> </table>	HMIS		H	1	F	4	R	0	PPE †		†Sec. 8	
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Potential Health Effects

Emergency and Hazards Overview:

Mixture contains flammable components and the vapors may ignite explosively. Vapors are heavier than air and may travel to distant sources of ignition and flash back. Harmful if swallowed or inhaled. Overexposure to vapors may cause dizziness, headache or central nervous depression. May cause irritation to the eyes, skin and respiratory tract.

Primary Entry Routes: Skin contact, skin absorption, eye contact, inhalation, and ingestion.

Acute Effects

Inhalation: May cause irritation of the nose, throat and respiratory tract. Excessive inhalation may result in headache, dizziness, fatigue, nausea, loss of consciousness, and even death.

Eye: May cause eye irritation on short-term exposure to liquid or vapor.

Skin: May cause skin irritation on short-term exposure to liquid or vapor. Solvents may be absorbed through the skin in toxic amounts.

Ingestion: Ingestion may cause symptoms similar to those of inhalation. The oral toxicity is estimated to be low, therefore not expected to be harmful in small amounts. Aspiration of material into lungs can cause chemical pneumonitis, which can be fatal.

Carcinogenicity: IARC, NTP, and OSHA do not list this product as a carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: Respiratory symptoms associated with pre-existing lung disorders and pre-existing heart disorders may be aggravated by exposure to this material. Prolonged skin contact with this product may defat skin leading to irritation or dermatitis resulting in itching, redness and rash.

Chronic Effects: Overexposure may result in headache, dizziness, fatigue, nausea and loss of consciousness.

Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Chronic exposure may cause reversible kidney and liver injury.

Section 3 – Ingredient Information

Hazardous Ingredients	CAS Number	% wt
Methyl Ethyl Ketone	78-93-3	30 – 60
Toluene	108-88-3	15 - 40
Additional Ingredients	CAS Number	% wt

Section 4 - First Aid Measures

Inhalation: Move victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention immediately.

Eye Contact: Immediately flush eyes with running water for at least 15 minutes. Get medical attention.

Skin Contact: Immediately flush skin with running water and remove contaminated clothing. Wash exposed area with soap and water. Get medical attention.

Ingestion: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Note to Physicians: This product contains methyl ethyl ketone (MEK) and toluene.

Special Precautions/Procedures: Whenever possible, remove the victim from the source of contamination.

Section 5 - Fire-Fighting Measures

Flash Point: -9°C (16°F)

Flash Point Method: Closed Cup

Autoignition Temperature: 404°C (759°F)

LEL: 1.8% by volume

UEL: 10.0% by volume

Flammability Classification: Division 2

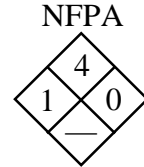
Extinguishing Media: In case of fire, use dry chemical, carbon dioxide, or foam. Water may not be effective as an extinguishing agent. Water fog or spray may be used to provide a smothering effect on fire and to cool fire-exposed containers and surrounding combustibles. Do not use a solid stream of water because it can scatter and spread the fire.

Unusual Fire or Explosion Hazards: Extremely flammable. Store and use away from all sources of heat, flame, or sparks. Do not smoke while applying. Vapors are heavier than air and may travel along ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electrical motors, static discharge, or other ignition sources at locations distant from material handling point and flash back. All containers should be grounded when material is transferred.

Hazardous Combustion Products: Toxic gases or vapors, such as carbon monoxide or carbon dioxide, various hydrocarbons, nitrogen compounds, and hydrogen cyanide may be released in a fire.

Fire-Fighting Instructions: This product contains solvents that are dangerous fire and explosion hazards when exposed to heat or flame. Fire fighters should wear a self-contained breathing apparatus and full protective clothing with a full-face piece operated in the positive-pressure demand mode.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full-face piece operated in pressure-demand or positive-pressure mode.



Section 6 - Accidental Release Measures

Spill /Leak Procedures: Remove all sources of ignition. Avoid breathing vapors. Use self-contained breathing apparatus in enclosed area. Ventilate area. Contain and remove with inert absorbent materials and non-sparking tools.

Personnel Safeguards: Immediately evacuate all non-essential personnel to safe areas. Emergency responders should wear proper protective gear before entering the affected area. Observe all precautions noted above.

Regulatory Notifications: Waste of this product is defined as hazardous according to U.S. EPA. Spill reporting requirements and reportable quantities vary by region. Consult all applicable state and local regulations.

Containment and Cleanup: Remove all sources of ignition. Do not use metal shovels or other tools that could create sparks. Prevent liquids from entering sewers, drains or waterways by diking with sand or earth. Absorb with vermiculite or other absorbent material and remove for disposal.

Section 7 - Handling and Storage

Handling Precautions: Use away from all sources of heat, flame, or sparks. Do not smoke while using. Handling equipment must be grounded to prevent sparking. Handle with non-sparking tools. Wash with soap and water before eating or drinking. Launder contaminated clothing. KEEP OUT OF REACH OF CHILDREN.

Storage Requirements: Keep containers cool, dry, and store away from all sources of heat, flame, and sparks. Keep containers tightly closed and store with adequate ventilation. Do not pressurize, cut, weld, or grind the containers or empty containers that may contain residual product and solvent vapors that may ignite explosively.

Section 8 – Exposure Controls/Personal Protection

Hazardous Ingredients:

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH IDLH
	TWA	STEL	TWA	STEL	TWA	STEL	
Methyl Ethyl Ketone	200 ppm	300 ppm	200 ppm	300 ppm	None estab.	None estab.	3000 ppm
Toluene	200 ppm	150 ppm	20 ppm	none estab.	100 ppm	150 ppm	500 ppm

Engineering Controls: Do not use in enclosed areas without proper explosion-proof ventilation. General and local exhaust ventilation must be sufficient to control vapor concentrations and keep the PEL below TLV/TWA. Use explosion proof ventilation equipment. Take care not to draw vapors into non-explosion proof or spark generating equipment.

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Respiratory Protection: Provide adequate ventilation to maintain vapors below TLV/TWA. If vapor levels are exceeded, use NIOSH approved respirator, both during and immediately after application, until vapor levels are below limits.

Protective Clothing/Equipment: Permeation resistant gloves (that meet ANSI/ISEA 105-2005) REQUIRED. Protective glasses or goggles recommended. Industrial boots to protect feet from adhesive contact. Long sleeves, long trousers to protect skin from adhesive contact. Protective skin creams or emollients useful.

Safety Stations: Source of clean water should be available in the work area for flushing skin and eyes.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics. KEEP OUT OF REACH OF CHILDREN!

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance and Odor: Pale yellow liquid with strong ketone odor.

Odor Threshold: Not available

Vapor Pressure: 70.0mm Hg at 20°C (77°F)

Vapor Density (Air=1): 2.4

Specific Gravity (H₂O=1, at 4°C/39°F): 0.883

pH: N/A

Water Solubility: Negligible

Boiling Point: 79.6°C (175°F)

Freezing/Melting Point: -86.7°C (-124.1°F)

% Volatile: 70-80

Evaporation Rate: 3.8 (nBuAc=1)

VOC: 600 – 700 gpl

Flash Point: -9.0°C (16°F)

Flash Point Method: Closed Cup

Autoignition Temperature: 404°C (759°F)

LEL: 1.8% by volume

UEL: 10.0% by volume

Section 10 - Stability and Reactivity

Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Will not occur.

Chemical Incompatibilities: Strong oxidizing agents, strong acids, or bases, alkali metals and halogens.

Conditions to Avoid: Heat, sparks, flames and other sources of ignition.

Hazardous Decomposition Products: Toxic gases or vapors such as carbon monoxide and carbon dioxide, may be released in a fire. Contact with strong oxidizing agents may cause fire and explosions.

Section 11- Toxicological Information

Toxicity Data:

Eye Effects: Irritating

Skin Effects: Irritating

Acute Inhalation Effects: Product toxicity has not been determined.

Following are the component data:

Methyl ethyl ketone: Rat, inhalation, LC₅₀: > 8000 ppm / 8 hr

Toluene: Rat > 26,700 ppm 1 hr; Mouse 400 ppm 24 hr

Acute Oral Effects: Product toxicity has not been determined.

Following are the component data:

Methyl ethyl ketone: Rat, oral, LD₅₀: 2.9 gm/kg

Toluene: Rat 5,000 mg/kg

Acute Dermal Effects: Product toxicity has not been determined.

Following are the component data:

Methyl ethyl ketone: Rabbit, dermal, LD₅₀: > 5 mL/kg

Chronic Effects: May cause skin sensitization in some people.

Carcinogenicity: Not listed in IARC or NTP

Mutagenicity: Some evidence in animal exposure to Toluene.

Teratogenicity: Some evidence in animal exposure to Toluene.

Reproductive Toxicity: Effects have been observed in rats exposed to >1000 ppm MEK vapors.

Section 12 - Ecological Information

Ecotoxicity: Not known

Environmental Fate: Not known

Environmental Degradation: Not known

Soil Absorption/Mobility: Not known

Section 13 - Disposal Considerations

Disposal: Dispose of in accordance with all local, state, and federal regulations.

Disposal Regulatory Requirements: Consult all regulations (federal, state, provincial, local) or a qualified waste disposal firm when characterizing waste for disposal.

Container Cleaning and Disposal: Dispose of waste in accordance with all applicable regulations. Waste which results from the clean up of spilled product, absorbed by a noncombustible absorbing media, would not be considered a hazardous waste once the methyl ethyl ketone and toluene have evaporated.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Adhesives, 3,
UN 1133, PGII

Shipping Symbols: Flammable

Hazard Class: 3

ID No.: UN1133

Packing Group: II

Label: red caution label required

Special Provisions (172.102):

149, B52, IB2, T4, TP1, TP8

Packaging Authorizations

a) **Exceptions:** 173.150

b) **Non-bulk Packaging:** 173.173

c) **Bulk Packaging:** 173.242

Quantity Limitations

a) **Passenger, Aircraft, or Railcar:** 5L

b) **Cargo Aircraft Only:** 60L

Vessel Stowage Requirements

a) **Vessel Stowage:** B

b) **Other:** ---

Section 15 - Regulatory Information

EPA Regulations:

RCRA Hazardous Waste Number (40 CFR 261.33): Methyl ethyl ketone, CAS #78-93-3, RCRA Code U159

RCRA Hazardous Waste Classification (40 CFR 261.31): F005 (methyl ethyl ketone) and F005 (Toluene).

RCRA Groundwater List:

Chemical Name	CAS #	Methods	PQL
Methyl ethyl ketone	78-93-3	8015, 8240	10, 100

CERCLA Hazardous Substance (40 CFR 302.4) listed/unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a), CAA, Sec. 112: Methyl ethyl ketone, 78-93-3, RQ 5000 lb
Toluene 1,000 lb (454.5 kg)

SARA 311/312 Codes:

SARA Toxic Chemical (40 CFR 372.65): Methyl Ethyl Ketone, CAS#78-93-3, 30 – 60%

Toluene, CAS#108-88-3, 15– 40%

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed, Threshold Planning Quantity (TPQ)

OSHA Regulations:

Clean Water Act Priority Pollutants: Toluene is listed as a priority pollutant. RQ: 1,000 lb (454.5 kg)

Clean Water Act Hazardous Substances: none listed

Clean Air Act SOCM Chemicals: Methyl ethyl ketone, CAS #78-93-3, Toluene, CAS #108-88-3

Clean Air Act Hazardous Air Pollutants: Methyl ethyl ketone, CAS #78-93-3, Toluene, CAS 108-88-3

Marine Pollutants: none listed

OSHA, IARC, NTP Carcinogens: none listed

State Regulations:

California Proposition 65 Chemicals: This product contains the following chemical(s) known to the state of California to cause birth defects or other reproductive harm: Toluene.

Delaware Air Quality Management List: Methyl ethyl ketone CAS #78-93-3 DRQ: 5000 State? No
Toluene CAS #108-88-3 DRQ: 1000 State? Yes

Massachusetts Hazardous Substances List:

Chemical Name	CAS #	Code
Methyl ethyl ketone	78-93-3	2, 4, 5, 6, F8, F9
Toluene	108-88-3	2, 4, 5, 6, F7, F8

Michigan Critical Materials Register: Toluene 108-88-3 Report: -- Class: --

Minnesota Hazardous Substances List:

Chemical Name	CAS #	Codes	Hazards	Carcinogen
Methyl ethyl ketone	78-93-3	ANO	--	No
Toluene:	108-88-3	ANO	skin	No

New Jersey RTK Hazardous Substance List:

Chemical Name	CAS #	Substance #	DOT #	TPQ	EHS
Methyl ethyl ketone	78-93-3	1258	1193	--	
Toluene:	108-88-3	1866	1294	---	

New York List of Hazardous Substances:

Chemical Name	CAS #	RQ Air	RQ Land	Note
Methyl ethyl ketone	78-93-3	5000	1	--
Toluene	108-88-3	1000	1	--

Pennsylvania Hazardous Substances List:

Chemical Name	CAS #	Code	
2-Butanone	78-93-3	E	Code E = Environmental hazard
Methyl benzene	108-88-3	E	

Washington Permissible Exposure Limits for Air Contaminants:

Chemical Name	CAS #	TWA Ppm	TWA mg	STEL ppm	STEL mg	Ceiling ppm	Ceiling mg	Skin
Methyl ethyl ketone	78-93-3	200	590	300	885	--	--	--
Toluene	108-88-3	100	375	150	560	--	--	--

Section 16 - Other Information

Prepared By: Research & Development

Revision Notes: Sections 5 and 9 – Revised Flash Point Data.

Additional Hazard Rating Systems:

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