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Version 3.1	Revision Date 03/22/2022	Print Date 03/22/2022			
SECTION 1. PRODUCT AND C	COMPANY IDENTIFICATION				
Trade name	: ZESTON® Perma-Weld® Clear	Adhesive			
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	: 24-Hour Number: +1-800-424-93	300 (CHEMTREC)			
Company	: Johns Manville Canada Inc.				
Address	: 5301 42 Avenue Innisfail, AB Canada T4G 1A2				
Telephone	: +1-303-978-2000				
Emergency telephone number	: 24-Hour Number: +1-800-424-93	300 (CHEMTREC)			
Recommended use of the	chemical and restrictions on use				
Recommended use	: Adhesives				
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) and the Hazardous Products Regulations (WHMIS 2015)

Flammable liquids	:	Category 2
Serious eye damage	:	Category 1
Carcinogenicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 3 (Respiratory system, Central nervous system)
GHS label elements Hazard pictograms	:	

Signal word	:	Danger
Hazard statements	:	H225 Highly flammable liquid and vapour. H318 Causes serious eye damage. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer if inhaled.



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Precautionary statements	 Prevention: P201 Obtain special instructions & P202 Do not handle until all safety and understood. P210 Keep away from heat/ spark No smoking. P233 Keep container tightly close P240 Ground/bond container and P241 Use explosion-proof electric equipment. P242 Use only non-sparking tools P243 Take precautionary measure P261 Avoid breathing mist or vape P271 Use only outdoors or in a we P280 Wear protective gloves/ proface protection. 	y precautions have been reacts (s/ open flames/ hot surface d. receiving equipment. cal/ ventilating/ lighting (s. es against static discharge. ours. ell-ventilated area.
	Response: P303 + P361 + P353 IF ON SKIN all contaminated clothing. Rinse s P304 + P340 + P312 IF INHALED and keep comfortable for breathin doctor if you feel unwell. P305 + P351 + P338 + P310 IF IN water for several minutes. Remov and easy to do. Continue rinsing. CENTER/ doctor. P308 + P313 IF exposed or conce attention. P370 + P378 In case of fire: Use of alcohol-resistant foam to extinguis	kin with water/ shower. D: Remove person to fresh a log. Call a POISON CENTER N EYES: Rinse cautiously w re contact lenses, if present Immediately call a POISON erned: Get medical advice/ dry sand, dry chemical or
	Storage: P403 + P233 Store in a well-venti tightly closed. P403 + P235 Store in a well-venti P405 Store locked up.	
	Disposal: P501 Dispose of contents/contain accordance with local, regional, no regulations.	
Other hazards None known.		

Chemical nature

Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)			
acetone; 2-propanone	67-64-1	>= 30 - < 60			
tetrahydrofuran	109-99-9	>= 10 - < 30			
Actual concentration or concentration range is withheld as a trade appret					

Actual concentration or concentration range is withheld as a trade secret



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SECTION 4. FIRST AID MEAS	URES				
General advice	 Handle in accordance with good in practice. Show this safety data sheet to the Move out of dangerous area. Do not leave the victim unattende 	e doctor in attendance.			
If inhaled	: Remove to fresh air immediately. immediately. If breathing is irregular or stopped respiration.				
In case of skin contact	: In case of contact, flush skin with minutes. Call a physician if irritation develo				
In case of eye contact	 In case of contact, immediately flu for at least 30 minutes. If easy to do, remove contact lens Protect unharmed eye. Continue rinsing eyes during trans 	ish eyes with plenty of water , if worn.			
If swallowed	: DO NOT induce vomiting unless of physician or poison control center	directed to do so by a			

immediately.

:

:

Causes serious eye damage.

May cause respiratory irritation. May cause drowsiness or dizziness.

personal protective equipment.

Suspected of causing cancer if inhaled.

Gently wipe or rinse the inside of the mouth with water. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician or Poison Control Centre

Repeated exposure may cause skin dryness or cracking. If potential for exposure exists refer to Section 8 for specific

SECTION 5. FIREFIGHTING MEASURES

Most important symptoms

Protection of first-aiders

delayed

and effects, both acute and

Suitable extinguishing media	:	Carbon dioxide (CO2) Dry chemical Foam Water spray
Unsuitable extinguishing media	:	High volume water jet
Hazardous combustion products	:	carbon oxides Hydrogen chloride gas chlorine compounds
Specific extinguishing methods Further information		Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Ground and bond container and receiving equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Take action to prevent static discharges. Use explosion-proof electrical/ ventilating/ lighting equipment. Use non-sparking tools.



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Special protective equipment for firefighters	Prevent fire water or the	t of fire, cool tanks with wate e extinguishing water from co e ground water system. t of fire, wear self-contained	ontaminating surface

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Pay attention to flashback. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Should not be released into the environment.
Methods and materials for containment and cleaning up	:	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Use explosion-proof equipment. Electrical equipment should be protected to the appropriate standard. Take measures to prevent the build up of electrostatic charge. Use only in area provided with appropriate exhaust ventilation. Keep away from open flames, hot surfaces and sources of ignition. Vapours are heavier than air and may spread along floors. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits.
Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.
Conditions for safe storage	:	Keep containers tightly closed in a dry, cool and well- ventilated place. To maintain product quality, do not store in heat or direct sunlight. Use explosion-proof equipment. Keep away from sources of ignition - No smoking.
materials to avoid	•	Keep away from oxidizing agents and strongly acid or alkaline materials.
Recommended storage temperature	:	< 99.9 °F / < 37.7 °C
Storage period	:	12 Months



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Further information on	: Keep containers tightly closed in a	drv. cool and well-

storage stability ventilate

Keep containers tightly closed in a dry, cool and ventilated place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
acetone; 2-propanone	67-64-1	TWA	250 ppm	ACGIH
		STEL	500 ppm	ACGIH
		TWA	250 ppm 590 mg/m3	NIOSH REL
		TWA	1,000 ppm 2,400 mg/m3	OSHA
tetrahydrofuran	109-99-9	TWA	50 ppm	ACGIH
		STEL	100 ppm	ACGIH
		TWA	200 ppm 590 mg/m3	NIOSH REL
		ST	250 ppm 735 mg/m3	NIOSH REL
		TWA	200 ppm 590 mg/m3	OSHA

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Samplin g time	Permissible concentratio n	Basis
acetone; 2-propanone	67-64-1	Acetone	Urine	End of shift (As soon as possible after exposure ceases)	25 mg/l	ACGIH BEI
tetrahydrofuran	109-99-9	Tetrahydrof uran	Urine	End of shift (As soon as possible after exposure ceases)	2 mg/l	ACGIH BEI

Engineering measures

 Use only in an area equipped with explosion proof exhaust ventilation.
 Provide exhaust ventilation close to floor level.
 Maintain air concentrations below occupational exposure

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

standards.



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	use NIOSH/MSHA approved resp by air purifying respirators against hazardous chemical is limited. Us supplied respirator if there is any release, exposure levels are unkn circumstance where air purifying r adequate protection.	t exposure to any e a positive pressure air potential for uncontrolled own, or any other		
Hand protection				
Material	: Solvent-resistant gloves			
Remarks	: Please observe the instructions re breakthrough time which are prov gloves. Also take into consideration conditions under which the product danger of cuts, abrasion, and the	ided by the supplier of the on the specific local ct is used, such as the contact time.		
Eye protection	 Wear safety glasses with side shi Wear face-shield and protective s problems. 			
Skin and body protection	: Wear protective clothing, such as pants. Remove and wash contaminated	-		
Hygiene measures	 Handle in accordance with good in practice. Written instructions for handling m place. Contaminated work clothing shou workplace. 	ndustrial hygiene and safety nust be available at the work		

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Colour Odour Odour Threshold	:	liquid colorless acetone-like No data available
pH Melting point/freezing point		No data available -10887 °C
Initial boiling point and boiling	:	56.1 °C
range Flash point	:	-217 °C
Evaporation rate Flammability (solid, gas)	:	No data available Not applicable
Upper explosion limit	:	12.8 %(V)
Lower explosion limit	:	1.4 %(V)
Vapour pressure Relative vapour density Relative density Density	•	2.41 hPa No data available No data available 0.929 g/cm ³
Solubility(ies) Water solubility	:	immiscible



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Solubility in other solvents Partition coefficient: n- octanol/water	No data availableNo data available	
Auto-ignition temperature	: 230 °C	
Thermal decomposition Viscosity	: No data available	
Viscosity, dynamic	: 700 - 1,000 mPa.s	
Viscosity, kinematic	: No data available	

SECTION 10. STABILITY AND REACTIVITY

Reactivity Chemical stability Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use. Stable under normal conditions. May form peroxides in the presence of air.
Conditions to avoid	:	Heat, flames and sparks. Electrostatic discharge
Incompatible materials	:	Oxidizing agents Strong acids and strong bases Strong reducing agents
Hazardous decomposition products	:	Peroxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:	
Acute oral toxicity	: Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method
Acute dermal toxicity	: Acute toxicity estimate : > 5,000 mg/kg Method: Calculation method
Components:	
acetone; 2-propanone:	
Acute oral toxicity	: LD50 (Rat, female): 5,800 mg/kg GLP: no
Acute inhalation toxicity	: LC50 (Rat, female): 76.0 mg/l Exposure time: 4 h Test atmosphere: vapour GLP: no
Acute dermal toxicity	: LD50 (Guinea pig, male and female): > 7,426 mg/kg GLP: no
totrahydrofuran	
tetrahydrofuran: Acute oral toxicity	: LD50 (Rat, male and female): 1,650 mg/kg
Acute inhalation toxicity	 LC50 (Rat, male and female): > 14.7 mg/l Exposure time: 6 h Test atmosphere: vapour



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	Assessment: The substance or mi inhalation toxicity Remarks: No mortality was observ	
Acute dermal toxicity	: LD50 (Rat, male and female): > 2 Method: OECD Test Guideline 40 GLP: yes	
Serious eye damage/eye irri	itation	
<u>Components:</u> acetone; 2-propanone: Species: Rabbit Result: Eye irritation Exposure time: 24 h Assessment: Irritating to eyes Method: Draize Test		
Serious eye damage/eye irri tetrahydrofuran: Species: Rabbit Result: Irreversible effects on Method: Draize Test GLP: no		
Respiratory or skin sensitis	ation	
<u>Components:</u> tetrahydrofuran: IARC	Group 2B: Possibly carcinogenic to h	numans
	tetrahydrofuran	109-99-9
OSHA	No component of this product preser equal to 0.1% is identified as a carcir carcinogen by OSHA (29 CFR 1910 Hazardous Substances).	nogen or potential
NTP	No component of this product preser equal to 0.1% is identified as a know by NTP.	
STOT - single exposure		

Components:

acetone; 2-propanone:

Exposure routes: inhalation (vapour) Target Organs: Nervous system Assessment: May cause drowsiness or dizziness.

STOT - single exposure

tetrahydrofuran: Exposure routes: Inhalation Target Organs: Respiratory system



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Assessment: May cause respiratory irritation.

Further information

Product:

Remarks: Repeated exposure may cause skin dryness or cracking.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components: tetrahydrofuran: Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 2,160 mg/l End point: mortality Exposure time: 96 h Test Type: flow-through test Method: OECD Test Guideline 203 GLP: no Toxicity to daphnia and other : LC50 (Daphnia magna (Water flea)): 3,485 mg/l aquatic invertebrates End point: mortality Exposure time: 48 h Test Type: static test Analytical monitoring: no Method: OECD Test Guideline 202 GLP: No information available. Toxicity to algae/aquatic ECx (Scenedesmus quadricauda (Green algae)): 3,700 mg/l Exposure time: 8 d plants Test Type: static test Analytical monitoring: no Toxicity to fish (Chronic NOEC (Pimephales promelas (fathead minnow)): 216 mg/l toxicity) Exposure time: 33 d Test Type: flow-through test Analytical monitoring: yes GLP: No information available. Persistence and degradability **Components:** acetone; 2-propanone: Biodegradability Result: Readily biodegradable. Biodegradation: 100 % **Bioaccumulative potential Components:**

acetone; 2-propanone:



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Partition coefficient: n- octanol/water	:	log Pow: -0.24 (68 °F / 20 °C)		
tetrahydrofuran: Partition coefficient: n- octanol/water	:	log Pow: 0.45 (77 °F / 25 °C) pH: 7		
Mobility in soil No data available				
Other adverse effects				
Product:				
Ozone-Depletion Potential	:	Regulation: 40 CFR Protection of Envir Protection of Stratospheric Ozone - CA Substances Remarks: This product neither contains manufactured with a Class I or Class II U.S. Clean Air Act Section 602 (40 CFF B).	A Section 602 Class I s, nor was ODS as defined by the	

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods	
Waste from residues	 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.
	The hazard and precautionary statements displayed on the
	label also apply to any residues left in the container.
Contaminated packaging	: Empty remaining contents.
	Dispose of as unused product.
	Do not re-use empty containers.
	Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

Land transport USDOT (Special Provision 149): UN1133, Adhesives, 3, II TDG: UN1133, Adhesives, 3, II

LIMITED QUANTITY if shipped in inner packagings not over 5.0 L (1.3 gallons) net capacity each, packed in a strong outer packaging.

Sea transport IMDG: UN1133, Adhesives, 3, II

Air transport IATA/ICAO: UN1133, Adhesives, 3, II

SECTION 15. REGULATORY INFORMATION



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TSCA list TSCA - 5(a) Significant New Use R Chemicals	ule List of :		substances are subject to a gnificant New Use Rule.
U.S. Toxic Substances Control Act 12(b) Export Notification (40 CFR 7			substances are subject to TSCA (b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ	Calculated product RQ
		(lbs)	(lbs)
tetrahydrofuran	109-99-9	1000	3333

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards	 Flammable (gases, aerosols, liquids, or solids) Carcinogenicity Serious eye damage or eye irritation Specific target organ toxicity (single or repeated exposure) 	
SARA 302	: This material does not contain any components with a section 302 EHS TPQ.	
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

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

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 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

acetone; 2-propanone 67-64-1 30 - 60 %

California Prop. 65

WARNING: This product can expose you to chemicals including tetrahydrofuran, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

TSCA	: All chemical substances in this product are either listed as active on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
DSL	: On the inventory, or in compliance with the inventory



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SECTION 16. OTHER INFORMATION

Further information

Temporary mechanical abrasion (itching) of skin, eyes and respiratory tract may occur upon exposure to particles during handling of this product and cannot occur unless there is direct contact. : 03/22/2022

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Full text of other abbreviations

		USA ACCILL Thread and Limit Valuas (TLV)
ACGIH		USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1
		Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour
		workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded
		at any time during a workday
OSHA / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials: bw - Body weight: CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL -Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS -Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS -Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA -International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 -Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA -National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD -Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS -Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations: UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods: vPvB - Very Persistent and Very Bioaccumulative



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Temporary mechanical abrasion (itching) of skin, eyes and respiratory tract may occur upon exposure to particles during handling of this product and cannot occur unless there is direct contact.

Disclaimer

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.