



GENERAL DESCRIPTION

A general purpose, synthetic polymer based contact bonding adhesive.

BASIC USE

Specifically designed to bond Hydrotech's Flex-Flash UN (uncured neoprene) flashing membrane to an acceptable substrate (i.e. wood, metal, concrete).

ADVANTAGES

- High resistance to aging, heat and cold
- Long tack time for easy construction assembly

TECHNICAL SPECIFICATIONS

Color:	Amber (yellow)	Weight/Gallon:	7.05 lb
Solvents:	Acetone	Solids Content:	24-25%
	Textile Spirits	Specific Gravity:	0.845
	Xylol	Shelf Life:	9 months, unopened
Base:	Neoprene Polymers		

APPLICATION

- Stir the Bonding Adhesive thoroughly before and during use.
- The mating surfaces of the Flex-Flash UN and substrate must be clean and free of any contaminants.
- Apply the Bonding Adhesive with a brush or roller. Coat both surfaces completely and evenly, avoiding globs and puddles, at a rate of 60 square feet per gallon on each surface.
- Allow both membrane surfaces to dry, typically 20-30 minutes depending on ambient temperature and humidity. When adequately dry the Bonding Adhesive should not stick or string-up to a dry finger touch.
- Mate the coated surfaces and apply positive pressure with a steel hand roller or broom to insure 100% adhesion.
- The minimum recommended application temperature is 40 °F or higher.

CAUTIONS

FLAMMABLE LIQUID!

Do not use near open fire or flame and extinguish all smoking materials. Use only in well ventilated areas. Avoid prolonged breathing of vapors and contact with skin.

A Material Safety Data Sheet is available upon request.

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29 CFR 1910.1200 (OSHA HazCom 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name

LOW-VOC BONDING ADHESIVE

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet American Hydrotech, Inc. 303 East Ohio Street, Suite 2700 Chicago, IL 60611 www.hydrotechusa.com	Emergency telephone number (312) 337-4998
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SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids	: Category 2
Eye irritation	: Category 2A
Reproductive toxicity	: Category 2
Specific target organ systemic toxicity - single exposure	: Category 3 (Respiratory system, Central nervous system)
Specific target organ systemic toxicity - repeated exposure (Inhalation)	: Category 2 (Neurologic: other (neuropsychological effects, auditory dysfunction and effects on colour vision))

GHS Label element

Hazard pictograms



Signal Word

: Danger

Hazard Statements

: Highly flammable liquid and vapor.
Causes serious eye irritation.

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May cause respiratory irritation.
 May cause drowsiness or dizziness.
 Suspected of damaging fertility or the unborn child.
 May cause damage to organs (Neurologic: other (neuropsychological effects, auditory dysfunction and effects on colour vision)) through prolonged or repeated exposure if inhaled.

Precautionary Statements

: Prevention:

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 Keep container tightly closed.
 Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
 Wash skin thoroughly after handling.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 IF exposed or concerned: Get medical advice/ attention.
 If eye irritation persists: Get medical advice/ attention.
 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

Store in a well-ventilated place. Keep container tightly closed.
 Store in a well-ventilated place. Keep cool.
 Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Static Accumulating liquid

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture

: Mixture

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Chemical nature : Static Accumulator

Chemical nature : Defatter

Hazardous components

Chemical Name	CAS-No.	Classification	Concentration (%)
TERT-BUTYL ACETATE	540-88-5	Flam. Liq. 2; H225 Acute Tox. 4; H332 STOT SE 3; H335, H336	46.26
ACETONE	67-64-1	Flam. Liq. 2; H225 Eye Irrit. 2A; H319 STOT SE 3; H336	21.77
TOLUENE	108-88-3	Flam. Liq. 2; H225 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Repr. 2; H361 STOT SE 3; H336 STOT RE 2; H373 Asp. Tox. 1; H304	4.78
XYLENE	1330-20-7	Flam. Liq. 3; H226 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 STOT SE 3; H335, H336 Asp. Tox. 1; H304	2.16

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MAGNESIUM OXIDE	1309-48-4	Not a hazardous substance or mixture.	1.30
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SECTION 4. FIRST AID MEASURES

General advice	: Move out of dangerous area. Call a POISON CENTRE or doctor/physician if exposed or you feel unwell. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	: Move to fresh air. Keep patient warm and at rest. If unconscious place in recovery position and seek medical advice. Consult a physician after significant exposure.
In case of skin contact	: Remove contaminated clothing. If irritation develops, get medical attention. If on skin, rinse well with water. Wash contaminated clothing before re-use. If on clothes, remove clothes.
In case of eye contact	: Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye.
If swallowed	: Obtain medical attention. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	: This material (or a component) has produced hyperglycemia and ketosis following substantial ingestion. Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material. Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: redness of the skin stomach or intestinal upset (nausea, vomiting, diarrhea) irritation (nose, throat, airways) temporary changes in mood and behavior effects on memory Shortness of breath

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confusion
 irregular heartbeat
 Causes serious eye irritation.
 May cause respiratory irritation.
 May cause drowsiness or dizziness.
 Suspected of damaging fertility or the unborn child.
 May cause damage to organs through prolonged or repeated exposure if inhaled.

Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Water spray
 Foam
 Alcohol-resistant foam
 Carbon dioxide (CO₂)
 Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.
 Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
 Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : acrid smoke and fumes
 carbon dioxide and carbon monoxide
 hydrogen chloride
 Carbon monoxide
 Organic acids
 Aldehydes
 Alcohols
 Hydrocarbons
 phenols
 magnesium oxide fumes

Specific extinguishing methods :

Product is compatible with standard fire-fighting agents.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
 Use a water spray to cool fully closed containers.

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Special protective equipment : In the event of fire, wear self-contained breathing apparatus.
for firefighters

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Remove all sources of ignition.
Use personal protective equipment.
Ensure adequate ventilation.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
- 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 : 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).
- Other information : Comply with all applicable federal, state, and local regulations.
Suppress (knock down) gases/vapours/mists with a water spray jet.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Open drum carefully as content may be under pressure.
Avoid formation of aerosol.
Provide sufficient air exchange and/or exhaust in work rooms.
Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Take precautionary measures against static discharges.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.

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No smoking.
Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
TERT-BUTYL ACETATE	540-88-5	TWA	200 ppm	ACGIH
		REL	200 ppm 950 mg/m3	NIOSH/GUID E
		PEL	200 ppm 950 mg/m3	OSHA_TRANS
ACETONE	67-64-1	TWA	500 ppm	ACGIH
		STEL	750 ppm	ACGIH
		REL	250 ppm 590 mg/m3	NIOSH/GUID E
		PEL	1,000 ppm 2,400 mg/m3	OSHA_TRANS
		TWA	250 ppm	ACGIHLIS_P
		STEL	500 ppm	ACGIHLIS_P
		TWA	750 ppm 1,800 mg/m3	Z1A
		STEL	1,000 ppm 2,400 mg/m3	Z1A
TOLUENE	108-88-3	TWA	20 ppm	ACGIH
		REL	100 ppm 375 mg/m3	NIOSH/GUID E
		STEL	150 ppm 560 mg/m3	NIOSH/GUID E
		TWA	200 ppm	OSHA/Z2
		Ceiling	300 ppm	OSHA/Z2
		MAX. CONC	500 ppm	OSHA/Z2
XYLENE	1330-20-7	TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
		PEL	100 ppm 435 mg/m3	OSHA_TRANS
		REL	100 ppm 435 mg/m3	NIOSH/GUID E
		STEL	150 ppm 655 mg/m3	NIOSH/GUID E
MAGNESIUM OXIDE	1309-48-4	TWA (Inhalable fraction.)	10 mg/m3 Inhalable fraction.	PY OEL
		TWA	10 mg/m3 Inhalable fraction.	ACGIH

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		PEL	15 mg/m3 Total particulate.	OSHA_TRANS
ETHYL BENZENE	100-41-4	TWA	20 ppm	ACGIH
		REL	100 ppm 435 mg/m3	NIOSH/GUIDE
		STEL	125 ppm 545 mg/m3	NIOSH/GUIDE
		PEL	100 ppm 435 mg/m3	OSHA_TRANS
TALC	14807-96-6	TWA	2 mg/m3 Respirable fraction.	ACGIH
		REL	2 mg/m3 Respirable.	NIOSH/GUIDE
		TWA	0.1 mg/m3 Respirable.	Z3
		TWA	0.3 mg/m3 Total dust.	Z3

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
ACETONE	67-64-1	acetone	Urine	Sampling time: End of shift.	50 mg/l	
Remarks:	Nonspecific					
TOLUENE	108-88-3	o-Cresol, with hydrolysis	Creatinine in urine	Sampling time: End of shift.	0.3 mg/g	
Remarks:	Background					
		toluene	Urine	Sampling time: End of shift.	0.03 mg/l	
		toluene	Blood	Sampling time: Prior to last shift of work week.	0.02 mg/l	
XYLENE	1330-20-7	Methylhippuric acids	Creatinine in urine	Sampling time: End of shift.	1.5 g/g	

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

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Personal protective equipment

Respiratory protection	: In the case of vapour formation use a respirator with an approved filter. A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.
Hand protection Remarks	: The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	: Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.
Skin and body protection	: Wear as appropriate: impervious clothing Safety shoes Flame-resistant clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear resistant gloves (consult your safety equipment supplier).
Hygiene measures	: Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid
Colour	: yellow
Odour	: No data available
Odour Threshold	: No data available
pH	: No data available
Melting point/freezing point	: No data available
Boiling point/boiling range	: 133 °F / 56 °C (1,013.232 hPa) Calculated Phase Transition Liquid/Gas

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Flash point : -4 °F / -20 °C
Calculated Flash Point

Evaporation rate : No data available

Flammability (solid, gas) :
No data available

Flammability (liquids) : Static Accumulating liquid

Flammability (liquids) :
Upper explosion limit : 12.8 %(V)
GLP: Calculated Explosive Limit

Lower explosion limit : 1 %(V)
GLP: Calculated Explosive Limit

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : 0.906 (77.00 °F)

Density : 0.906 g/cm3 (77.00 °F)

Solubility(ies)

Water solubility : No data available

Solubility in other solvents : No data available

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

Thermal decomposition : No data available

Viscosity

Viscosity, dynamic : 2,500 mPa.s

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Vapours may form explosive mixture with air.

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Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Acids
alkalis
Amines
Ammonia
chlorine trifluoride
halogens
nitrates
Oxidizing agents
peroxides
phosphorus pentachloride
Reducing agents
strong alkalis

Hazardous decomposition products : carbon dioxide and carbon monoxide
Hydrocarbons

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation
Skin contact
Eye Contact
Ingestion

Acute toxicity

Not classified based on available information.

Components:

TERT-BUTYL ACETATE:

Acute oral toxicity : LD 50 (Rat, male): 4,100 mg/kg

Acute inhalation toxicity : LC 50 (Rat): 4211 ppm
Exposure time: 6 h
Test atmosphere: vapour
Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.

Acute dermal toxicity : LD 50 (Rabbit): > 19,800 mg/kg

ACETONE:

Acute oral toxicity : LD 50 (Rat, female): 5,800 mg/kg

Acute inhalation toxicity : LC 50 (Rat, female): 76 mg/l
Exposure time: 4 h

Acute dermal toxicity : LD 50 (Rabbit): > 7,426 mg/kg

TOLUENE:

Acute oral toxicity : LD 50 (Rat): > 5,000 mg/kg

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Acute inhalation toxicity : LC 50 (Rat): 8000 ppm
Exposure time: 4 h

Acute dermal toxicity : LD 50 (Rabbit): 12,124 mg/kg

XYLENE:

Acute oral toxicity : LD 50 (Rat): 3,523 - 8,600 mg/kg

Acute inhalation toxicity : LC 50 (Rat): 6700 ppm
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD 50 (Rabbit): 1,700 mg/kg

MAGNESIUM OXIDE:

Acute oral toxicity : LD 50 (Rat): > 5,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Result: Repeated exposure may cause skin dryness or cracking.

Remarks: May cause skin irritation in susceptible persons.

Components:

TERT-BUTYL ACETATE:

Result: Mildly irritating to skin

ACETONE:

Result: Mildly irritating to skin

Result: Repeated exposure may cause skin dryness or cracking.

TOLUENE:

Result: Irritating to skin

XYLENE:

Result: Irritating to skin

MAGNESIUM OXIDE:

Result: Possibly irritating to skin

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin., Causes serious eye irritation.

Components:

TERT-BUTYL ACETATE:

Result: Mildly irritating to eyes

ACETONE:

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Result: Irritating to eyes

TOLUENE:

Result: Irritating to eyes

XYLENE:

Result: Irritating to eyes

MAGNESIUM OXIDE:

Result: Possibly irritating to eyes

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

Components:

TERT-BUTYL ACETATE:

Species: Guinea pig

Assessment: Did not cause sensitisation on laboratory animals.

Method: Buehler Test

Germ cell mutagenicity

Not classified based on available information.

Components:

TERT-BUTYL ACETATE:

Genotoxicity in vitro

- : Test Type: Ames test
Test species: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: negative
- : Test Type: Chromosome aberration test in vitro
Test species: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo

- : Test Type: in vivo assay
Test species: Rat (male and female)
Cell type: Bone marrow
Application Route: Inhalation
Result: negative

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Components:

TOLUENE:

Reproductive toxicity -
Assessment

- : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

STOT - single exposure

May cause respiratory irritation.

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May cause drowsiness or dizziness.

Components:

TERT-BUTYL ACETATE:

Exposure routes: Ingestion

Target Organs: Central nervous system

Assessment: May cause drowsiness or dizziness.

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

ACETONE:

Exposure routes: Inhalation

Target Organs: Nervous system

Assessment: May cause drowsiness or dizziness.

TOLUENE:

Exposure routes: Inhalation

Target Organs: Central nervous system

Assessment: May cause drowsiness or dizziness.

XYLENE:

Assessment: May cause respiratory irritation., May cause drowsiness or dizziness.

STOT - repeated exposure

May cause damage to organs (Neurologic: other (neuropsychological effects, auditory dysfunction and effects on colour vision)) through prolonged or repeated exposure if inhaled.

Components:

TOLUENE:

Exposure routes: Inhalation

Target Organs: Neurologic: other (neuropsychological effects, auditory dysfunction and effects on colour vision)

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

Aspiration toxicity

Not classified based on available information.

Product:

No aspiration toxicity classification

Components:

ACETONE:

May be harmful if swallowed and enters airways.

TOLUENE:

May be fatal if swallowed and enters airways.

XYLENE:

May be fatal if swallowed and enters airways.

Further information

Product:

Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting., Concentrations substantially above the TLV value may cause narcotic effects., Solvents may degrease the skin.

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Carcinogenicity:
IARC

Group 2B: Possibly carcinogenic to humans

ETHYL BENZENE 100-41-4

TALC 14807-96-6

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.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

TERT-BUTYL ACETATE:

Toxicity to fish

: LC50 (Oncorhynchus mykiss (rainbow trout)): 240 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates

: EC50 (Water flea (Daphnia magna)): 350 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae

: ErC50 (Pseudokirchneriella subcapitata (microalgae)): 16 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

NOEC (Pseudokirchneriella subcapitata (microalgae)): 2.3 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

ACETONE:

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Toxicity to fish : LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss)): 4,740 - 6,330 mg/l
Exposure time: 96 h
Test Type: static test

LC 50 (Fathead minnow (Pimephales promelas)): 8,733 - 9,482 mg/l
Exposure time: 96 h
Test Type: flow-through test

Toxicity to algae : NOEC (Microcystis aeruginosa): 530 mg/l
Exposure time: 8 d
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 2,112 mg/l
Exposure time: 28 d
Test Type: flow-through test

TOLUENE:

Toxicity to fish : LC50 (Oncorhynchus kisutch (coho salmon)): 5.5 mg/l
Exposure time: 96 h
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (Ceriodaphnia dubia)): 3.78 mg/l
Exposure time: 48 h
Remarks: Mortality

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (microalgae)): > 433 mg/l
End point: Growth inhibition
Exposure time: 96 h

NOEC (Scenedesmus quadricauda (Green algae)): > 400 mg/l
End point: Growth inhibition
Exposure time: 7 d

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 1.39 mg/l
Exposure time: 40 d
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Water flea (Ceriodaphnia dubia)): 0.74 mg/l
Exposure time: 7 d

XYLENE:

Toxicity to fish : LC 50 (Fathead minnow (Pimephales promelas)): 23.53 - 29.97 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Water flea (Daphnia magna)): > 100 - < 1,000 mg/l
Exposure time: 24 h

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Test Type: static test

Persistence and degradability

Components:

TERT-BUTYL ACETATE:

Biodegradability : aerobic
 Result: Not readily biodegradable.
 Biodegradation: 50 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301D

ACETONE:

Biodegradability : Result: Readily biodegradable
 Biodegradation: 90.9 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301B

TOLUENE:

Biodegradability : Result: Readily biodegradable

XYLENE:

Physico-chemical : Remarks: The product evaporates readily.
 removability

MAGNESIUM OXIDE:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

Components:

TERT-BUTYL ACETATE:

Partition coefficient: n- : log Pow: 1.76
 octanol/water

ACETONE:

Partition coefficient: n- : log Pow: -0.24
 octanol/water

TOLUENE:

Bioaccumulation : Species: Ide, silver or golden orfe (Leuciscus idus)
 Bioconcentration factor (BCF): 94
 Exposure time: 3 d
 Concentration: 0.05 mg/l
 Method: Not reported

Partition coefficient: n- : log Pow: 2.73
 octanol/water

XYLENE:

Partition coefficient: n- : log Pow: 3.16

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octanol/water

Mobility in soil

Components:

No data available

Other adverse effects

No data available

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Harmful to aquatic life.

Components:

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

General advice : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

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

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
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

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

UN	1133	Adhesives	3	II
----	------	-----------	---	----

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	1133	Adhesives	3	II
----	------	-----------	---	----

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INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN	1133	Adhesives	3	II

INTERNATIONAL MARITIME DANGEROUS GOODS

UN	1133	ADHESIVES	3	II

TRANSPORT CANADA - INLAND WATERWAYS

UN	1133	ADHESIVES	3	II

TRANSPORT CANADA - RAIL

UN	1133	ADHESIVES	3	II

TRANSPORT CANADA - ROAD

UN	1133	ADHESIVES	3	II

U.S. DOT - INLAND WATERWAYS

UN	1133	Adhesives	3	II

U.S. DOT - RAIL

UN	1133	Adhesives	3	II

U.S. DOT - ROAD

UN	1133	ADHESIVOS	3	II

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Marine pollutant	no
------------------	----

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION

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

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
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XYLENE	1330-20-7	100	4608.719698
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SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 313 Component(s)

TOLUENE	108-88-3	4.78 %
XYLENE	1330-20-7	2.16 %
ETHYL BENZENE	100-41-4	0.63 %

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

ETHYL BENZENE	100-41-4
FORMALDEHYDE	50-00-0
2-CHLORO-1,3-BUTADIENE	126-99-8
BENZENE	71-43-2
TRANS-1,4-DICHLOROBUT-2-ENE	110-57-6
LEAD OXIDE	1317-36-8
CADMIUM OXIDE	1306-19-0

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

TOLUENE	108-88-3
BENZENE	71-43-2
LEAD OXIDE	1317-36-8
CADMIUM OXIDE	1306-19-0

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

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL.

AUSTR : Not in compliance with the inventory

ENCS : Not in compliance with the inventory

KECL : On the inventory, or in compliance with the inventory

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PICCS : Not in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

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NFPA:	HMIS III:						
Flammability Health Instability Special hazard.	<table> <tr> <td>HEALTH</td><td>2*</td></tr> <tr> <td>FLAMMABILITY</td><td>3</td></tr> <tr> <td>PHYSICAL HAZARD</td><td>0</td></tr> </table> 0 = not significant, 1 = Slight, 2 = Moderate, 3 = High 4 = Extreme, * = Chronic	HEALTH	2*	FLAMMABILITY	3	PHYSICAL HAZARD	0
HEALTH	2*						
FLAMMABILITY	3						
PHYSICAL HAZARD	0						

NFPA Flammable and Combustible Liquids Classification

Flammable Liquid Class IB

Full text of H-Statements referred to under sections 2 and 3.

H225	Highly flammable liquid and vapor.
H226	Flammable liquid and vapor.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.

Sources of key data used to compile the Safety Data Sheet

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Ashland internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists
BEI : Biological Exposure Index
CAS : Chemical Abstracts Service (Division of the American Chemical Society).
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
FG : Food grade
GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement : Hazard Statement
IATA : International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

ICAO : International Civil Aviation Organization
ICAO-TI (ICAO) : Technical Instructions by the "International Civil Aviation Organization"
IMDG : International Maritime Code for Dangerous Goods
ISO : International Organization for Standardization
logPow : octanol-water partition coefficient
LCxx : Lethal Concentration, for xx percent of test population
LDxx : Lethal Dose, for xx percent of test population.
ICxx : Inhibitory Concentration for xx of a substance
Ecxx : Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD : Organization for Economic Co-operation and Development
OEL : Occupational Exposure Limit
P-Statement : Precautionary Statement
PBT : Persistent , Bioaccumulative and Toxic
PPE : Personal Protective Equipment
STEL : Short-term exposure limit
STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value
TWA : Time-weighted average
vPvB : Very Persistent and Very Bioaccumulative
WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act
DOT : Department of Transportation
FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act
HMIRC : Hazardous Materials Information Review Commission
HMIS : Hazardous Materials Identification System
NFPA : National Fire Protection Association
NIOSH : National Institute for Occupational Safety and Health
OSHA : Occupational Safety and Health Administration
PMRA : Health Canada Pest Management Regulatory Agency

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RTK : Right to Know

WHMIS : Workplace Hazardous Materials Information System



77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0373

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 12/06/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

Fax;
314-241-2203

RE: Green Roof Materials Product Data

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☒ Approval	☐ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	SENT VIA:	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☒ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	Package	Code	Rev.	Copies	Date	Description	Status
Submittal		071413-008	1		12/06/2016	Green Roof Materials Product Data	Submitted

NOTES:

CC:

Signed: _____
Devin Gates