

MM[®] ElastoBond Activator

Promotes adhesion of rubber seal

The products listed below along with their corresponding Safety Data Sheets (SDS) are contained in this document:

- ElastoBond Activator
 - Promotes adhesion of rubber seal to LokCrete Elastomeric Concrete (LMS Series) and to MM High Strength Epoxy (EBS & ERS Series)

MM Systems Corp. • 50 MM Way, Pendergrass, GA 30567 • 866.506.6929 • www.mmsystemscorp.com

SAFETY DATA SHEET

SAFETY DATA SHEET

Section 1 – Product and Company Identification

ADDRESS: MM SYSTEMS CORPORATION
 50 MM WAY
 PENDERGRASS, GA 30567
 Toll Free Domestic - 800-241-3460 International - 1-706-824-7500

PRODUCT NAME: **MM Elastobond Adhesion Promoter**
 PRODUCT USE: Adhesion promoter

24 HR EMERGENCY TELEPHONE NUMBER:
WITHIN USA & CANADA: 800-424-9300
OUTSIDE USA & CANADA: +1 703-527-3887

Section 2 – Hazards Identification

Classification of the substance or mixture

GHS RATINGS:

Flammable liquid	2	Flash point < 23° C and initial boiling point > 35° C (95° F)
Inhalation Toxicity	Acute Tox. 4	Gases >2500 +<=20000ppm, Vapors >10+<=20mg/l, Dusts & mists >1+<=5 mg/l
Skin corrosive	2	Reversible adverse effects in dermal tissue. Draize score: >=2.3 < 4.0 or persistent inflammation
Eye corrosive	2.A	Eye irritant: Subcategory 2A, Reversible in 21 days
Skin sensitizer	1	Skin sensitizer
Mutagen	1B	Known to produce heritable mutations in human germ cells Subcategory 1B, Positive results: In vivo heritable germ cell tests in mammals. Human germ cell tests. In vivo somatic mutagenicity tests, combined with some evidence of germ cell mutagenicity.
Carcinogen	1B	Presumed Human Carcinogen. Based on demonstrated animal carcinogenicity
Organ toxin single exposure	3	Transient target organ effect – Narcotic effects – Respiratory tract irritation
Organ toxin repeated exposure	2	Presumed to be harmful to human health – Animal studies with significant toxic effects relevant to humans at generally moderate exposure (guidance) – Human evidence in exceptional cases
Aspiration hazard	1	Aspiration Toxicity Category 1: Known (regarded) – human evidence – hydrocarbons with kinematic viscosity ? 20.5 mm ² /s at 40° C

GHS Hazards		GHS Precautions	
H225	Highly flammable liquid and vapor	P101	If medical advice is needed, have product container or label on hand
H304	May be fatal if swallowed and enters airways	P102	Keep out of reach of children
H315	Causes skin irritation	P103	Read label before use
H317	May cause an allergic skin reaction	P201	Obtain specialty instructions before use
H319	Causes serious eye irritation	P202	Do not handle until all safety precautions have been read and understood
H332	Harmful if inhaled	P210	Keep away from heat, sparks, open flames and hot surfaces – No smoking
H336	May cause drowsiness or dizziness	P233	Keep container tightly closed
H340	May cause genetic defects	P240	Ground and bond container and receiving equipment
H350	May cause cancer	P241	Use explosion-proof electrical, ventilating, lighting and motorized equipment
H373	May cause damage to organs through prolonged or repeated exposure	P242	Use only non-sparking tools
		P243	Take precautionary measures against static discharge

		P260	Do not breathe dust, mist, vapors or spray
		P264	Wash contacted skin thoroughly after handling
		P271	Use only outdoors or in a well-ventilated area
		P272	Contaminated work clothing should not be allowed out of the workplace
		P280	Wear protective gloves, protective clothing, eye protection, face protection and respiratory protection
		P312	Call a POISON CENTER or doctor if you feel unwell
		P321	Specific treatment (see first aid instructions on SDS)
		P331	Do NOT induce vomiting
		P362	Take off contaminated clothing and wash before reuse
		P301 + P310	If SWALLOWED: Immediately call a POISON CENTER or doctor/physician
		P303+P361+P353	IF ON SKIN (or hair): Immediately take off all contaminated clothing. Wash skin with soap and water
		P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
		P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
		P308+P313	If exposed or concerned: Get medical advice
		P333+P313	If skin irritation or a rash occurs: Get medical advice
		P337+P313	If eye irritation persists: Get medical advice
		P370+P378	In case of fire: Use dry chemical, CO ₂ , foam or water fog to extinguish
		P405	Store locked up
		P403+P235	Store in a well ventilated place. Keep cool
		P501	Dispose of contents and container in accordance with local, regional, national and international regulations

Danger



Hazards not otherwise classified (HNOC) or not covered by GHS:

None known

Section 3 – Composition

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Light Aliphatic Solvent Naphtha (Petroleum 64742-89-8 50 percent Vapor Pressure: 5.3	PEL=300pm	PEL=300PPM	
Methyl Ethyl Ketone 78-93-3 20 percent Vapor Pressure: 12.13 25C	200 ppm TWA; 590 mg/m3 TWA	300 ppm STEL 200 ppm TWA	NIOSH: 200 ppm TWA; 590 mg/m3 TWA 300 ppm STEL; 885 mg/m3 STEL
Acetone 67-64-1 10 to 20%	1000 ppm TWA; 2400 mg/m3 TWA	750 ppm STEL 500 ppm TWA	NIOSH: 250 [[, TWA' 590 mg/m3 TWA
Methyl n-Amyl Ketone 110-43-0 5 to 10%	100 ppm TWA; 465 mg/m3 TWA	50 ppm TWA	NIOSH: 100 ppm TWA; 465 mg/m3 TWA
Butyl Alcohol 71-36-3 1 to 5%	100 ppm TWA 300 mg/m3 TWA	20 ppm TWA	NIOSH: 50 ppm Ceiling; 150 mg/m3 Ceiling
Maleic anhydride modified chlorinated polypropylene 68609-36-9 1 to 5%	None Listed	None	
Bisphenol A epoxy resin 25068-38-6 1 to 5%			

Section 4 – First Aid Measures

INHALATION: If inhaled: Remove person to fresh air and keep comfortable for breathing. . If breathing difficulty persists, seek medical attention.

EYE CONTACT: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for a minimum of 15 minutes while holding eye lids open. If eye irritation persist: seek medical attention.

SKIN CONTACT: Take off all contaminated clothing immediately. Wash exposed area thoroughly with soap and water. Seek medical attention if irritation persists. Do NOT use solvents or thinners to wash off.

INGESTION: If swallowed, seek medical attention immediately and have product container and label at hand. DO NOT INDUCE VOMITING unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:

Dizziness, breathing difficulty, headaches, & loss of coordination.

May cause skin sensitization or allergic skin reaction.

Indication of any immediate medical attention and special treatment needed.

Seek professional medical attention for all over-exposures and/or persistent problems.

Section 5 – Fire Fighting Measures

LEL: 1.0%

UEL: 112.8%

Extinguishing Media: Dry Chemical, Foam, CO2 or water fog.

Unsuitable Extinguishing Media: High volume water jets

Unusual Fire and Explosion Hazards: Vapors can travel to a source of ignition and flash back. Closed containers may explode when exposed to extreme heat or burst when contaminated with water (CO₂ gas evolved). Hazards apply to empty containers. Combustion generates toxic fumes.

Hazardous Combustion Products: oxides of carbon, oxides of nitrogen, formaldehyde, toxic fumes

Special Firefighting Procedures: Highly toxic fumes may be generated by thermal decomposition. Water runoff from firefighting can cause environmental damage. Dike and collect water used to fight fire.

Fire Equipment: Full fire fighter equipment including SCBA should be worn to avoid skin contact and inhalation of concentrated vapors. Minimize skin exposure.

Section 6 – Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors and mist. Ensure adequate ventilation. Eliminate all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulation to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let products enter drains.

Methods and materials for containment and cleaning up: Dike spill area and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth. Sweep up and dispose of in appropriate containers in accordance to Federal, State and/or Local regulations. Clean preferably with a detergent; avoid use of solvents.

Section 7 – Handling and Storage

Safe Handling Measures: Avoid contact with skin and eyes. May cause skin sensitization or allergic skin reaction. Avoid inhalation of vapor or mist. Ground and bond container and receiving equipment. Use non-sparking tools and explosion proof equipment when handling this material. Keep away from sources of ignition – No Smoking. Use in cool, well-ventilated areas. Keep containers closed when not in use. Take measures to prevent the build up of electrostatic charge. Follow all SDS and label precautions even after container is emptied because they may retain product residues. For precautions see section 2.

Storage Requirements: Keep container tightly closed. Keep away from heat, sparks, open flames and hot surfaces. No Smoking. Store in a cool, dry and well-ventilated place. Do not reuse container when empty.

Section 8 – Exposure Control and PPE

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Light Aliphatic Solvent Naphtha (Petroleum 64742-89-8 50 percent Vapor Pressure: 5.3	PEL=300pm	PEL=300PPM	
Methyl Ethyl Ketone 78-93-3 20 percent Vapor Pressure: 12.13 25C	200 ppm TWA; 590 mg/m ³ TWA	300 ppm STEL 200 ppm TWA	NIOSH: 200 ppm TWA; 590 mg/m ³ TWA 300 ppm STEL; 885 mg/m ³ STEL
Acetone 67-64-1 10 to 20%	1000 ppm TWA; 2400 mg/m ³ TWA	750 ppm STEL 500 ppm TWA	NIOSH: 250 [I, TWA' 590 mg/m ³ TWA
Methyl n-Amyl Ketone 110-43-0 5 to 10%	100 ppm TWA; 465 mg/m ³ TWA	50 ppm TWA	NIOSH: 100 ppm TWA; 465 mg/m ³ TWA
Butyl Alcohol 71-36-3 1 to 5%	100 ppm TWA 300 mg/m ³ TWA	20 ppm TWA	NIOSH: 50 ppm Ceiling; 150 mg/m ³ Ceiling

Maleic anhydride modified chlorinated polypropylene 68609-36-9 1 to 5%	None Listed	None	
Bisphenol A epoxy resin 25068-38-6 1 to 5%			

Engineering Controls: Ground and bond container and receiving equipment. Use explosion proof electrical, ventilation, lighting and motorized equipment. Use non-sparking tools. Ensure adequate ventilation.

Ventilation: General mechanical ventilation or local exhaust should be utilized to keep vapor concentrations below exposure limits (PEL & TLV). Ventilation equipment must be explosion proof.

Safe Work Practices: Eye washes and safety showers in the workplace are recommended. Avoid contact with skin and eyes. Avoid breathing vapors. Wash hands thoroughly after using and before eating, drinking or smoking. Employee education and training in the safe use and handling of this product is required under the OSHA Hazard Communication Standard 29CFR1200. Smoking in area where this material is used should be strictly prohibited. Always use protective clothing and equipment. Remove all contaminated clothing and wash thoroughly when finished working. Keep food and drink away from material and from area where material is being used. Spraying of material can cause an oxygen deficient environment. Use proper ventilation to remove vapors, mist and fumes combined with NIOSH approved respirator.

Respiratory Protection: When working with this material use a MSHA/NIOSH approved cartridge respirator or suitable respiratory protection to keep airborne mists and vapor concentrations below the PEL & TLV limits. When using in poorly ventilated and confined spaces, use a fresh-air supplying respirator or a self-contained breathing apparatus.

Eye/Face Protection: Use safety glasses with chemical splash goggles or faceshield.

Skin Protection: Use chemical resistant gloves.

Body Protection: Impervious clothing, flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Contaminated Gear: Take off contaminated clothing immediately and wash before reuse.

Section 9 – Physical and Chemical Properties

This mixture typically exhibits the following properties under normal circumstances:

Appearance: Pale Yellow Odor: Organic Solvent pH: No data available Freezing point: No data available Flash point: -4 F, -20 C Flammability: No data available Vapor Pressure: 38.9 mmHg Density (Lb/Gal) 6.60 Partition coefficient (n-octanol water): No data available Decomposition temperature: No data available Regulatory Coating VOC g/L 742 Actual Coating VOC g/L 656 Weight Percent Volatile 94.51 % Weight VOC 83.01 % Wt Exempt VOC 11.50	Physical State: Liquid Odor Threshold: No data available Melting point: No data available Boiling range: 56° C Evaporation rate: No data available Explosive Limits: 1% - 13% Vapor Density: 1.7 Solubility: No data available Autoignition temperature: 343° C Viscosity: No data available Regulatory Coating VOC lb/gal: 6.19 Actual Coating VOC lb/ga: 5.48 Specific Gravity (SG): 0.791 % Weigh Water 0.0 % Vol Exempt VOC: 11.48
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Section 10 – Stability and Reactivity

Reactivity: No data available

Stability: Stable under recommended storage conditions

Possibility of hazardous reactions: Vapors may form explosive mixture with air. Hazardous polymerization will not occur.

Conditions to avoid: Heat, flame and sparks. Extreme temperature and direct sunlight.

Incompatibility with: Acids, Strong bases, Strong oxidizers

Hazardous products produced under decomposition: Carbon Monoxide, Carbon Dioxide.

Section 11 – Toxicological Information

Mixture Toxicity

Oral Toxicity: 3.27mg/kg

Dermal Toxicity: 4,363 mg/kg

Inhalation Toxicity: 17 mg/L

Component Toxicity

64742-89-8	Light Aliphatic Solvent Naphtha (Petroleum) Oral: 5,000 mg/kg (Mouse) Dermal: 3,000 mg/kg (Rabbit)
78-93-3	Methyl Ethyl Ketone Oral: 2,484 mg/kg (Rat) Dermal: 5,000 mg/kg (Rabbit)
110-43-0	Methyl n-Amyl Ketone Oral: 1,600 mg/kg (Rat) Inhalation: 4,000 ppm (Rat)
71-36-3	Butyl Alcohol Oral: 700 mg/kg (Rat) Dermal: 3,402 mg/kg (Rabbit)

This mixture has not been tested for toxicological effects.

Acute Effects:

INHALATION – Dizziness, breathing difficulty, headaches, & loss of coordination

EYE CONTACT – Moderate irritation, tearing, redness, and blurred vision

SKIN CONTACT: Moderate irritant. Can dry and defat skin causing cracks, irritation, and dermatitis.

INGESTION: Can cause gastrointestinal irritation, vomiting, nausea, & diarrhea.

Chronic Effects: May affect liver, kidney and central nervous system with repeated exposure. Prolonged or repeated exposure may cause lung injury. May cause skin sensitization or allergic skin reaction.

Routes of Entry: Inhalation – Skin Contact – Eye Contact – Ingestion

Target Organs: Eyes – Kidneys – Liver – Lungs – Central Nervous System – Reproductive System – Skin – Peripheral Nervous System – Respiratory System - Other

EFFECTS OF OVEREXPOSURE

Short Term Exposure The vapors of butyl alcohols irritates the eyes and respiratory tract. They can irritate the skin and cause rash or burning feeling on contact. May affect the central nervous system. Exposure to high concentrations could cause headache, nausea, vomiting, and dizziness. Exposure to high levels of the n-isomer may cause unconsciousness and may lead to irregular heartbeat. The oral LD50 value for rats for the various isomers are as follows: (n-) 790 mg/kg; (sec-) 6,480 mg/kg; (iso-) 2,460 mg/kg; (tert-) 3,500 mg/kg. Methyl n-amyl ketone can affect you when breathed in and by passing through your skin. Irritates the eyes and the respiratory tract. May affect the central nervous system. Breathing the vapor can cause dizziness and lightheadedness, and can make you pass out. Irritates the eyes and the respiratory tract. May affect the central nervous system. Contact can irritate the skin. Exposure can irritate the eyes and respiratory tract. Exposure to high concentrations can cause dizziness, lightheadedness, and unconsciousness.

Long Term Exposure Repeated or prolonged contact with skin may cause dermatitis, drying and cracking of the skin. Exposure to the n-isomer can damage the liver, heart, and kidneys, cause hearing loss and affect sense of balance. Causes skin irritation with cracking and drying; destroys the skin's natural oils. May cause liver and kidney damage. May affect the nervous system. Repeated skin exposure can cause drying and cracking of the skin. This chemical has not been adequately evaluated to determine whether brain or nerve damage could occur with repeated exposure. However, many solvents and other petroleum-based chemicals have been shown to cause such. Effects may include reduced memory and concentration, personality changes (withdrawal, irritability), and fatigue, sleep disturbances, reduced coordination, and/or effects on the nerves to the arms and legs (weakness, "pins and needles"). Has been implicated in certain nervous system and brain disorders characterized by weakness, fatigue, sleep disturbances, reduced coordination, heaviness in chest and numbness of hand and feet. These symptoms may develop after 1 year of exposure to vapor concentrations of 50 – 200 ppm. Improvement is gradual and may take years after exposure is discontinued. Animal tests show that this chemical is a teratogen in animals and possibly causes toxic effects upon human reproduction.

The following chemicals comprise of at least 0.1% of this mixture and are listed and/or classified as carcinogens of potential carcinogens by the NTP, IARC, OSHA (mandatory listing) or ACGIH (optional listing).

<u>CAS Number</u>	<u>Description</u>	<u>% Weight</u>	<u>Carcinogen Rating</u>
64742-89-8	Light Aliphatic Solvent Naphtha (Petroleum)	50 to 60%	Light Aliphatic Solvent Naphtha (Petroleum): EU REACH: Present (P)

Section 12 – Ecological Information

This material has not been tested for ecological effects.

Persistence and degradability: No data available.

Bioaccumulative potential: No data available.

Mobility in soil: No data available

Other adverse effects: Contains photochemically reactive solvent.

Component Ecotoxicity

Light Aliphatic Solvent Naphtha (Petroleum)	72 Hr EC50 Pseudokirchneriella subcapitata: 4700 mg/L
Methyl Ethyl Ketone	96 Hr LC50 Pimephales promelas: 3130 – 3320 mg/L [flow-through] 48 Hr EC40 Daphnia magna: >520 mg/L; 48 Hr EC50 Daphnia magna: 5091 mg/L; 48 Hr EC50 Daphnia magna: 4025-6440 mg/L [Static]
Acetone	96 Hr LC50 Oncorhynchus mykiss: 4.74 – 6.33 mL/L; 96 Hr LC50 Pimephales promelas: 6210-8120 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 8300 mg/L 48 Hr EC50 Daphnia magna: 10294 – 17705 mg/L [Static]; 48 Hr EC50 Daphnia magna: 12600 – 12700 mg/L
Methyl n-Amyl Ketone	96 Hr LC50 Pimephales promelas: 126 – 137 mg/L [flow-through]
Cutyl Alcohol	96 Hr LC50 Pimephales promelas: 1730-1910 mg/L [static]; 96 Hr LC50 Pimephales promelas: 1910000 mg/L [static] 48 Hr EC50 Daphnia magna: 1983 mg/L; 48 Hr EC50 Daphnia magna: 1897 – 2072 mg/L [static] 96 Hr EC50 Desmodesmus subspicatus: >500 mg/L; 72 Hr EC50 Desmodesmus subspicatus: >500 mg/L.

Section 13 – Disposal Considerations

Product should be disposed of in accordance with all Federal, State and local regulations. Contact a licensed professional waste disposal service to dispose of this material. Subject to hazardous waste generation, treatment, storage and disposal rules under RCRA, 40CFR261.

Section 14 – Transportation Information

The following transportation information is provided based on MM Systems Corporation's interpretation of shipping regulations. Each shipper is responsible for identifying, naming, marking and labeling prior to offering for transport.

Agency	Proper Shipping Name	UN Number	Packing Group	Hazard Class
USDOT	Paint Related Material	UN1263	II	3
IMDG	Paint Related Material	UN1263	II	3
IATA	Paint Related Material	UN1263	II	3

For inner packagings not exceeding 5L each packaged in a strong outer box: Limited Quantity

Section 15 – Regulatory Information

The information listed in this section is not all inclusive of all regulations for this product or the chemical components of this product.

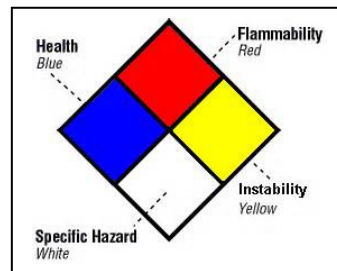
California Hazardous Substance List	None
HAPS – The formulation contains the following HAPS:	None
NJ RTK The following chemicals are listed under New Jersey RTK	71-36-3 Butyl Alcohol 1 to 5% 110-43-0 Methyl n-Amyl Ketone 5 to 10% 67-64-1 Acetone 10 to 20% 78-93-3 Methyl
California Proposition 65	WARNING: This product contains the following chemical(s) known to the State of California to cause birth defects or other reproductive harm – 50-00-1 Formaldehyde 24 PPM
California Proposition 65	WARNING: This product contains the following chemical(s) known to the State of California
PA RTK	The following chemicals are listed under Pennsylvania RTK: 71-36-3 Butyl Alcohol 1 to 5% 110-43-0 Methyl n-Amyl Ketone 5 to 10% 67-64-1 Acetone 10 to 20% 78-93-3 Methyl Ethyl Ketone 10 to 20%
EU REACH SIN	The chemicals listed below are on the EU REACH SIN list None

SARA 312	This Product contains the following chemicals subject to the reporting requirements of SARA 312: 71-36-3 Butyl Alcohol 1 to 5% 78-93-3 Methyl Ethyl Ketone 10 to 20%
SARA 313	This Product contains the following chemicals subject to the reporting requirements of SARA 313: 67-56-1 Methyl Alcohol 30 to 40 PPM 78-93-3 Methyl Ethyl Ketone 10 to 20%
WHMIS	71-36-3 Butyl Alcohol 1 to 5% 110-43-0 Methyl n-Amyl Ketone 5 to 10% 67-64-1 Acetone 10 to 20% 78-93-3 Methyl Ethyl Ketone 10 to 20%
TSCA	The following are not listed under TSCA: None
SARA	The following are reportable under SARA 71-36-3 Butyl Alcohol 1.0 – 5% 64742-89-8 Light Aliphatic Solvent Naphtha (Petroleum) 50 – 60% 78-93-3 Methyl Ethyl Ketone 10 – 20%

Section 16 – Other Information

Note: HMIS Ratings involve data and interpretations that can vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all information contained in this SDS must be considered.

HEALTH HAZARD <i>(Possible injury)</i>		<input type="checkbox"/>
FLAMMABILITY <i>(Susceptibility to burning)</i>		<input type="checkbox"/>
REACTIVITY <i>(Susceptibility to release energy)</i>		<input type="checkbox"/>
PERSONAL PROTECTION <i>(Check all Protective Equipment that apply)</i>		
<input type="checkbox"/> Safety Glasses	<input type="checkbox"/> Apron	
<input type="checkbox"/> Face Shield	<input type="checkbox"/> Full Suit	
<input type="checkbox"/> Splash Goggles	<input type="checkbox"/> Boots	
<input type="checkbox"/> Vapor Respirator	<input type="checkbox"/> Dust Respirator	
<input type="checkbox"/> Gloves	<input type="checkbox"/> Other _____	



Date Prepared: 1/21/2015

To the best of our knowledge, the information contained herein is accurate, obtained from sources believed by MM Systems Corporation to be accurate. As with all chemicals, KEEP AWAY FROM CHILDREN AND ANIMALS. FOR PROFESSIONAL USE ONLY. The hazard information contained herein is offered solely for the consideration of the user, subject to his own investigation and verification of compliance with applicable regulations, including the safe use of the project under every foreseeable condition.