



## 1. MATERIAL AND COMPANY IDENTIFICATION

<b>Material Name</b>	<b>SIL-ACT® Ep-700 D Part B</b>	
<b>Uses</b>	Epoxy curing agent	
<b>Company</b>	<b>Advanced Chemical Technologies, Inc.</b> 100 West Wilshire Blvd., Suite C-1 Oklahoma City, Oklahoma 73116	
<b>MSDS Request</b>	1-800-535-0433	www.advchemtech.com
<b>Emergency Telephone Number</b>	1-800-255-3924	

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

<b>Chemical</b>	<b>CAS No.</b>	<b>Concentration</b>
Solvent Naphtha (Petroleum), Light Aromatic *	64742-95-6	40-55 %W
TE TA, reaction products with phenol/formaldehyde	32610-77-8	15-20% W
Triethylenetetramine	112-24-3	<6 % W
Phenol	108-95-2	<6% W
Nonylphenol	84852-15-3	10-20 %W

\*Contains Xylene (Mixed Isomers), CAS # 1330-20-7; Trimethylbenzene (all isomers), CAS# 25551-13-7; Cumene, CAS# 98-82-8

## 3. HAZARDS IDENTIFICATION

### **DANGER!**

#### **Warning Statement**

CORROSIVE – CAUSES EYE AND SKIN BURNS  
HARMFUL IF ABSORBED THROUGH SKIN  
MODERATE SKIN IRRITANT  
MAY CAUSE SKIN SENSITIZATION BY SKIN CONTACT  
USE WITH ADEQUATE VENTILATION  
CAUSES SEVERE RESPIRATORY TRACT IRRITATION AND CAN  
CAUSE DAMAGE  
ASPIRATION HAZARD IF SWALLOWED – CAN ENTER LUNGS AND  
CAUSE DAMAGE  
HARMFUL OR FATAL IF SWALLOWED  
COMBUSTIBLE LIQUID AND VAPOR. KEEP AWAY FROM HEAT AND  
FLAME. Vapors are heavier than air. Vapors may travel across the ground  
and reach remote ignition sources causing a flashback fire danger.

#### **Emergency Overview**

#### **Appearance and Odor**

Colorless to light yellow.  
Liquid.  
Amine mixed with aromatic hydrocarbon



## Health Hazards

### Inhalation

Irritating to respiratory system. Vapors may cause drowsiness and dizziness. Vapor or mist, especially as generated from heating the material or from exposure in poorly ventilated areas or confined spaces, are irritating and cause nasal discharge, coughing, and discomfort in nose and throat. Prolonged or repeated overexposure may result in lung damage.

### Skin Contact

Causes severe irritation with pain, severe excess redness and swelling with chemical burns, blister formation, and possible tissue destruction.

### Eye Contact

Eye contact causes severe irritation, experienced as pain, with excess blinking and tear production, and seen as extreme redness and swelling of the eye and chemical burns of the eye. Severe eye damage may cause blindness.

### Ingestion

Harmful may cause lung damage if swallowed. Causes burning of mouth, throat, and stomach with abdominal and chest pain, nausea, vomiting, diarrhea, thirst, weakness, and collapse. Aspiration may occur during swallowing or vomiting, resulting in lung damage.

### Other Information

Possibility of organ or organ system damage from prolonged exposure; see Section 11 for details. Target organ(s):

Auditory system

Cardiovascular system

Central nervous system (CNS)

### Signs and Symptoms

Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing. Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance.

Auditory system effects may include temporary hearing loss and/or ringing in the ears.

### Aggravated Medical Condition

Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Liver disorders (such as jaundice or liver enlargement). Kidney disorders (such as edema, or proteinuria). Asthma. Adverse respiratory effects (such as cough, Tightness of chest or shortness of breath). Skin disorders and allergies. Adverse skin effects (such as rash, irritation, or corrosion). Adverse eye effects (such as conjunctivitis or corneal damage). Eye disease

### Environmental Hazards

Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

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## 4. FIRST AID MEASURES

### General Information

Get immediate medical attention. Contact a poison control center.

### Inhalation

Move to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment. If the heart is stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

### Skin Contact

Remove contaminated clothing and shoes. Flush exposed area with water for at least 15 minutes and follow by washing with soap if available. Do not attempt to neutralize with chemical agents. Discard or decontaminate

<b>Eye Contact</b>	clothing and shoes prior to reuse. Flush eyes with water for at least 15 minutes while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision, or swelling persists, transport to the nearest medical facility for additional treatment.
<b>Ingestion</b>	If swallowed, do not induce vomiting, transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

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## 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

<b>Flash point</b>	38 - 47.22 °C / 100 - 117.00 °F (TCC)
<b>Specific Hazards</b>	Carbon monoxide may be evolved if incomplete combustion occurs. The solvent will float and can be reignited on surface water. The vapor is heavier than air, spreads along the ground and distant ignition is possible. Nitrogen oxides will form. Ammonia may form.
<b>Extinguishing Media</b>	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Do not discharge extinguishing waters into the aquatic environment.
<b>Unsuitable Extinguishing Media</b>	Do not use water in a jet.
<b>Protective Equipment for Firefighters</b>	Wear full protective clothing and self-contained breathing apparatus.
<b>Additional Advice</b>	Keep adjacent containers cool by spraying with water. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products.

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## 6. ACCIDENTAL RELEASE MEASURES

<b>Protective measures</b>	Observe all relevant local and international regulations. Ventilate area. Avoid breathing vapor. Avoid contact with spilled or released material. Immediately remove all contaminated clothing. Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapor or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas indicator.
<b>Clean Up Methods</b>	For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
<b>Additional Advice</b>	See Section 13 for information on disposal. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity (refer to Section 15) to the National Response Center at (800) 424-8802. Under Section 311 of the Clean Water Act (CWA) this material is considered an oil. As such, spills

into surface waters must be reported to the National Response Center (US Coast Guard) at (800) 424-8802. This material is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Petroleum Exclusion. Therefore, releases to the environment may not be reportable under CERCLA.

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## 7. HANDLING AND STORAGE

<b>General Precautions</b>	Avoid breathing of or contact with material. Only use in well ventilated areas. Wash thoroughly after handling.
<b>Handling</b>	Extinguish any naked flames. Do Not smoke. Remove ignition sources. Avoid sparks. Avoid contact with skin, eyes, and clothing. Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge ( $\leq 1$ m/sec until fill pipe submerged to twice its diameter, then $\leq 7$ m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations. Do NOT use sodium nitrite or other nitrosating agents with this product.
<b>Storage</b>	Must be stored in a diked well- ventilated area, away from sunlight, ignition sources and other sources of heat. Bulk storage tanks should be diked. Keep away from aerosols, flammables, oxidizing agents, corrosives and from other flammable products which are not harmful or toxic to man or to the environment. Storage Temperature: Ambient.
<b>Product Transfer</b>	Keep containers closed when not in use. Do not use compressed air for filling, discharging or handling.
<b>Recommended Materials</b>	For containers, or container linings use mild steel, stainless steel. For container paints, use epoxy paint, zinc silicate paint.
<b>Unsuitable Materials</b>	Avoid prolonged contact with natural, butyl or nitrile rubbers.
<b>Container Advice</b>	Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational Exposure Limits

OSHA Regulations 29CFR1910.1000 and 29CFR1926.55 provide exposure regulated levels.

Trimethyl benzene

TWA 25 ppm (125 mg/m<sup>3</sup>)

Xylenes

TWA 100 ppm (435 mg/m<sup>3</sup>); STEL 150 ppm (655 mg/m<sup>3</sup>)

Cumene

TWA 50 ppm (245 mg/m<sup>3</sup>)

The ACGIH recommends the following threshold levels.

Trimethyl benzene

TWA 25 ppm (123 mg/m<sup>3</sup>)

Xylenes

TWA 100 ppm (434 mg/m<sup>3</sup>); STEL 150 ppm (651 mg/m<sup>3</sup>) with an A4 designation

Cumene

TWA 50 ppm (246 mg/m<sup>3</sup>)

The solvent manufacturer recommends a TWA of 19 ppm (100 mg/m<sup>3</sup>)

Phenol

TWA: ACGIH 5 ppm; REL: NIOSH 5 ppm (19 mg/m<sup>3</sup>); Ceiling Limit Value and Time Period (if specified): NIOSH 15.6 ppm (60 mg/m<sup>3</sup>); PEL, TWA OSHA Z1 5 ppm (19 mg/m<sup>3</sup>); PEL, TWA US CA OEL 5 ppm (19 mg/m<sup>3</sup>);

Triethylenetetramine

TWA: WEEL 1 ppm (6 mg/m<sup>3</sup>)

<b>Exposure Controls</b>	The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Eye washes and showers for emergency use. Wash hands before eating, drinking, smoking and using the toilet.
<b>Personal Protective Equipment Respiratory Protection</b>	Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for organic amines and for aromatic solvent vapors [boiling point >65 °C (149 °F)] meeting EN141. Where air-filtering respirators are unsuitable (e.g., airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
<b>Hand Protection</b>	Longer term protection: Nitrile rubber gloves Incidental contact/Splash protection: PVC or neoprene rubber gloves.
<b>Eye Protection Protective Clothing</b>	Chemical splash goggles (chemical goggles). Use protective clothing that is chemical resistant to this material. Safety shoes and boots should also be chemical resistant.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless to light yellow.
Odor	Amine mixed with aromatic odor.
Boiling point	Greater than 148 - 182 °C / 298 - 360 °F
Flash point	Of combustible component 38 - 47.22 °C / 100 - 117.00 °F (IP 170)
Vapor Density (Air = 1)	> 1
pH	basic
Vapor pressure	1 mm Hg at 20 °C / 68 °F
Specific gravity	0.92 at 20 °C / 68 °F
Density	Typical 920 g/L 20 °C / 68 °
Water solubility	Insoluble
Volatile organic carbon content	40-55 %W
Evaporation rate (nBuAc=1)	< 1.0 (ASTM D 3539, n-BuAc=1)

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## 10. STABILITY AND REACTIVITY

<b>Stability</b>	Stable under normal conditions of use.
<b>Conditions to Avoid</b>	Avoid heat, sparks, open flames and other ignition sources. Do not formulate with nitrites.
<b>Materials to Avoid</b>	Strong oxidizing agents, strong acids or bases in bulk. Avoid contact with acrylates, aldehydes, atmospheric moisture, halogenated organics, ketones.
<b>Hazardous Decomposition Products</b>	Thermal decomposition is highly dependent on conditions. A complex mixture including ammonia, carbon monoxide, carbon dioxide, nitrogen oxides, aldehydes, ketones, and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.
<b>Hazardous Polymerization</b>	No

**11. TOXICOLOGICAL INFORMATION**

<b>Basis for Assessment</b>	Information given is based on product testing, and/or similar products, and/or components.
<b>Acute Oral Toxicity</b>	Low toxicity: LD50 580 mg/kg , Rat; moderately toxic Aspiration into the lungs may cause chemical pneumonitis which can be fatal.
<b>Acute Dermal Toxicity</b>	Low toxicity: LD50 500 mg/kg Rabbit; moderately toxic
<b>Acute Inhalation Toxicity</b>	Low toxicity: LC50 greater than near-saturated vapor concentration. / 1 hours, Rat High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.
<b>Skin Irritation</b>	Corrosive
<b>Eye Irritation</b>	Severe Eye irritation
<b>Respiratory Irritation</b>	Repeated inhalation of vapors and mists is expected to cause irritation of the respiratory tract. May cause lung damage.
<b>Sensitization</b>	May cause sensitization by skin contact.
<b>Repeated Dose Toxicity</b>	Auditory system: prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats. Solvent abuse and noise interaction in the work environment may cause hearing loss. Central nervous system: repeated exposure affects the nervous system. Cardiovascular system: chronic abuse of similar materials has been associated with irregular heart rhythms and cardiac arrest. Can cause damage to the kidneys, liver, pancreas and spleen; and edema of the lungs.

Material	Carcinogenicity Classification
Xylene, Mixed Isomers	ACGIH Group A4: Not classifiable as a human carcinogen.
Xylene, Mixed Isomers	IARC 3: Classification not possible from current data.
Phenol	IARC 3: Classification not possible from current data.
Phenol	NTP: No evidence
Phenol	ACGIH: Group A4: Not classifiable as a human carcinogen

<b>Reproductive and Developmental Toxicity</b>	Causes foetotoxicity in animals at doses which are maternally toxic.
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**12. ECOLOGICAL INFORMATION**

<b>Acute Toxicity</b>	Extremely toxic
<b>Fish</b>	Toxic: 1 < LC/EC/IC50 <= 1.5 mg/L
<b>Aquatic Invertebrates</b>	Toxic: 1 < LC/EC/IC50 <= 4 mg/L
<b>Algae</b>	Toxic: 1 < LC/EC/IC50 <= 10 mg/L
<b>Mobility</b>	Adsorbs to soil and has low mobility. Partially floats on water.
<b>Persistence/degradability</b>	Unknown for mixture
<b>Bioaccumulation</b>	Has the potential to bioaccumulate.

**13. DISPOSAL CONSIDERATIONS**

<b>Material Disposal</b>	Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
<b>Container Disposal</b>	Drain container thoroughly. After draining, vent in a safe place away from

**Local Legislation**

sparks and fire. Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums. Send to drum recycler or metal reclaimer. Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

**14. TRANSPORT INFORMATION****US Department of Transportation Classification (49CFR)**

Identification number	UN 1760
Proper shipping name	Corrosive Liquid, n.o.s. (nonylphenol)
Class / Division	8
Packing group	III
Label	8 (Corrosive)

**IIMDG**

Identification number	UN 2920
Proper shipping name	Corrosive Liquid, Flammable, n.o.s. (nonylphenol)
Class / Division	8
Packing group	II
Marine pollutant	Yes
Label	8+3 (Corrosive + Flammable)

**IATA (Country variations may apply)**

Identification number	UN 2920
Proper shipping name	Corrosive Liquid, Flammable, n.o.s. (nonylphenol)
Class / Division	8
Packing group	II
Label	8+3 (Corrosive + Flammable)

**15. REGULATORY INFORMATION**

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

**Part A. Federal Regulatory Status****Notification Status**

Solvent Naphtha (Petroleum), Light Aromatic (64742-95-6)

DSL	Listed	
TSCA	Listed	
EINECS	Listed	265-199-0
WHMIS	Listed	B3

**Notification Status Legend**

Substances; DSL = Canadian Domestic Substances List. TSCA = Toxic Substance Control Act; EINECS = European Inventory of New and Existing Chemicals; WHMIS = Canadian Workplace Hazardous Materials Information System

TE TA, reaction products with phenol/formaldehyde (64742-95-6)

DSL	Listed
TSCA	Listed

**Notification status Legend**

See above

EINECS Listed Included on inventory or polymer substance, monomers included on inventory or no longer polymer

WHMIS Listed

Nonylphenol (84852-15-3)

DSL Listed

TSCA Listed

EINECS Listed

WHMIS Listed

284-325-5  
Class D: Div 2,  
Subdiv B; Irritant  
Class E:  
Corrosive

**Notification status Legend**

See above

Triethylenetetramine (112-24-3)

DSL Listed

TSCA Listed

EINECS Listed

WHMIS Listed

203-950-6, Xi  
D1B Toxic, D2B  
Toxic, E  
Corrosive

**Notification status Legend**

See above

Phenol (108-95-2)

DSL Listed

TSCA Listed

EINECS Listed

WHMIS Listed

203-632-7, C; Xn  
B3 Combustible;  
D1A Very Toxic,  
E Corrosive

**Notification status Legend**

See above

**Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)**

Solvent Naphtha (Petroleum), Light Aromatic Reportable Quantity 3,333 lbs

(64742-95-6)\*

Cumene (98-82-8) Reportable quantity: 5,000 lbs

Xylene, Mixed Isomers (1330-20-7) Reportable quantity: 100 lbs

Toluene (108-88-3) Reportable quantity: 1,000 lbs

Benzene (71-43-2) Reportable quantity: 10 lbs

Phenol (108-95-2) Reportable quantity: 1,000 lbs

\*Material supplier classifies the solvent as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA. The components with RQs are given for information.

**SARA Extremely Hazardous Substances (302/304)**

Phenol (108-95-2) Reportable quantity: 10,000/1,000 lbs

**Clean Water Act (CWA) Section 311**

Xylene, Mixed Isomers (1330-20-7) Reportable quantity: 100 lbs

Toluene (108-88-3) Reportable quantity: 1,000 lbs

Benzene (7143-2)

Reportable quantity: 10 lbs

Under Section 311 of the Clean Water Act (CWA) this material is considered an oil. As such, spills into surface waters must be reported to the National Response Center at (800) 424-8802. The components with RQs are given for information.

**SARA Hazard Categories (311/312)**

Immediate (Acute) Health Hazard, Chronic Health Hazard, Fire Hazard

**SARA Toxic Release Inventory (TRI) (313)**

1,2,4-Trimethyl benzene (95-63-6)	22.50%
Cumene (98-82-8)	3.00%
Xylene, Mixed Isomers (1330-20-7)	1.50%
Toluene (108-88-3)	0.013%
Benzene (71-43-2)	0.0035%
Phenol (108-95-2)	Reportable

**Part B. State Regulatory Status****California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**

Known to the State of California to cause birth defects or other reproductive harm.

Known to the state of California to cause cancer.

Toluene (108-88-3) 0.013%	Developmental toxin.
Benzene (71-43-2) 0.003%	Carcinogenic.
	Developmental toxin.
	Male reproductive toxin.

**New Jersey Right-To-Know Chemical List**

1,2,4-Trimethyl benzene (95-63-6) 22.50%	Listed
1,3,5-Trimethyl benzene (108-67-8) 6.00%	Listed.
Cumene (98-82-8) 3.00%	Listed
1,2,3-Trimethyl benzene (526-73-8) 2.00%	Listed.
Xylene, Mixed Isomers (1330-20-7) 1.5%	Listed
Toluene (108-88-3) 0.013%	Listed
Benzene (71-43-2) 0.003%	Listed
TE TA, reaction products with phenol/formaldehyde (32610-77-8)	Not listed
Triethylenetetramine (112-24-3)	Listed
Phenol (108-95-2)	Listed
Nonylphenol (84852-15-3)	Not Listed

**Pennsylvania Right-To-Know Chemical List**

1,2,4-Trimethyl benzene (95-63-6) 22.50%	Environmental hazard.
	Listed.
1,3,5-Trimethyl benzene (108-67-8) 6.00%	Listed.
Cumene (98-82-8) 6.00%	Environmental hazard.
	Listed.
1,2,3-Trimethyl benzene (526-73-8) 2.00%	Listed.
Xylene, Mixed Isomers (1330-20-7) 1.50%	Environmental hazard.
	Listed.
Toluene (108-88-3) 0.013%	Environmental hazard.
	Listed.
Benzene (71-43-2) 0.003%	Special hazard.

Environmental hazard.  
Listed.

Nonylphenol (84852-15-3) 20-40%

Not Listed

TETA, reaction products with phenol/formaldehyde (32610-77-8)

Not Listed

Triethylenetetramine (112-24-3)

Listed

Phenol (108-95-2)

Listed

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## 16. OTHER INFORMATION

**HMIS Rating (Health, Fire, Reactivity)** 3, 2, 0

**NFPA Rating (Health, Fire, Reactivity)** 3, 2, 0

### Disclaimer

The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product. The information is not presented as a material specification.