



# MATERIAL SAFETY DATA SHEET

Use in case of emergency only:  
**CHEM-TEL** – 1-800-255-3924 or 1-813-248-0585 (Call Collect)

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<p><b>Product Identifier</b>  <b>Armaflex 520 Adhesive</b></p> <p><b>Supplier</b>          Armacell LLC          7600 Oakwood Street Extension          Mebane, NC 27302          Emergency Tel: (919) 304-3846 or          1 (800) 866-5683          Monday - Friday, 8:00 - 16:30 Eastern Time</p> <p><b>Manufacturer</b>          W. W. Henry          150 Mooney Drive          Bourbonnais, IL          40914          Emergency Tel: (815)933-8059          Monday - Friday, 8:00 - 16:30 Central Time</p>	<p><b>HMSI Hazard Index</b></p> <table style="width: 100%;"> <tr> <td style="width: 50%;">4 Severe Hazard</td> <td style="width: 50%; text-align: right;"><b>HEALTH</b> <span style="border: 1px solid black; padding: 2px;">2*</span></td> </tr> <tr> <td>3 Serious Hazard</td> <td style="text-align: right;"><b>FLAMMABILITY</b> <span style="border: 1px solid black; padding: 2px;">3</span></td> </tr> <tr> <td>2 Moderate Hazard</td> <td style="text-align: right;"><b>REACTIVITY</b> <span style="border: 1px solid black; padding: 2px;">0</span></td> </tr> <tr> <td>1 Slight Hazard</td> <td style="text-align: right;"><b>PERSONAL PROTECTION</b> <span style="border: 1px solid black; padding: 2px;">G</span></td> </tr> <tr> <td>0 Minimal Hazard</td> <td></td> </tr> </table> <p style="text-align: center;">   </p> <p><b>WHMIS Classification:</b></p> <p><b>B2</b> = Flammable liquid  <b>D2B</b> = Toxic material causing other chronic effects</p> <p>* Refer to Section 11 'Effects of Chronic Exposure to Material'</p>	4 Severe Hazard	<b>HEALTH</b> <span style="border: 1px solid black; padding: 2px;">2*</span>	3 Serious Hazard	<b>FLAMMABILITY</b> <span style="border: 1px solid black; padding: 2px;">3</span>	2 Moderate Hazard	<b>REACTIVITY</b> <span style="border: 1px solid black; padding: 2px;">0</span>	1 Slight Hazard	<b>PERSONAL PROTECTION</b> <span style="border: 1px solid black; padding: 2px;">G</span>	0 Minimal Hazard	
4 Severe Hazard	<b>HEALTH</b> <span style="border: 1px solid black; padding: 2px;">2*</span>										
3 Serious Hazard	<b>FLAMMABILITY</b> <span style="border: 1px solid black; padding: 2px;">3</span>										
2 Moderate Hazard	<b>REACTIVITY</b> <span style="border: 1px solid black; padding: 2px;">0</span>										
1 Slight Hazard	<b>PERSONAL PROTECTION</b> <span style="border: 1px solid black; padding: 2px;">G</span>										
0 Minimal Hazard											

<b>Product Code / Synonyms</b> Armaflex 520 Adhesive	<b>Product Use</b> Armaflex insulation adhesive	
<b>Chemical Name</b> Not Applicable	<b>Chemical Family</b> Solvent dispersed synthetic rubber resin adhesive.	<b>Chemical Formula</b> Not Applicable

## Section 2 - COMPOSITION, INFORMATION ON INGREDIENTS

Ingredients	Percentage (by weight)	CAS Numbers	LD50 (species and route)	LC50 (species and route)
Hexane <sup>1</sup>	35 - 37	110-54-3	(oral-rat)28710mg/kg	(ihl-hmn)TCLo190ppm/8W
Acetone <sup>2</sup>	25 - 27	67-64-1	(oral-man)TDLo2857mg/kg	(ihl-man)TCLo12000ppm/4H
Neoprene rubber, etc.*	22 - 24			
Toluene <sup>3</sup>	16 - 18	108-88-3	(oral-rat)636mg/kg	(ihl-man)TCLo100ppm
Magnesium oxide <sup>4</sup>	1 - 3	1309-48-4	Not Available	(ihl-hmn)TCLo400mg/m <sup>3</sup>

**Notes:**

1) RTECS Number: MN9275000	3) RTECS Number: XS5250000
2) RTECS Number: AL3150000	4) RTECS Number: OM3850000

\* Other ingredients contained in this product, considered to have certain toxicological properties, are below the minimum ingredient disclosure requirements of the CPR, and are therefore not indicated.

**Refer to Section 8 for exposure guidelines.**

## Section 3 - HAZARDS IDENTIFICATION

**Emergency Overview**

Straw colored liquid with characteristic solvent odor.  
 Causes respiratory tract, skin and eye irritation. May damage nerves. May affect the central nervous system.  
 Flammable liquid and vapor. May cause flash fire.  
 Keep away from all ignition sources. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Keep container tightly closed after use. Wash thoroughly after handling. Store away from incompatibles. Use only with adequate ventilation. Handle with caution. Keep out of the reach of children.

**Potential health effects****Routes of entry:** Inhalation acute, skin contact, eye contact, ingestion.**Eyes:** May cause irritation.**Skin:** May cause irritation.**Ingestion:** May cause nausea, vomiting, headache, drunkenness, brain damage and heart failure. Drinking alcohol may worsen the effects.**Inhalation:** May cause irritation. Additional effects may include nausea, irregular heartbeat, headache, drunkenness, numbness, lung congestion, nerve damage, loss of memory, blurred vision, impotence, paralysis, convulsions and heart failure.**Chronic effects:** In addition to effects from short term exposure, may cause conjunctivitis, blister formation and itching may occur.**Section 4 - FIRST AID MEASURES****First aid procedures****Eyes:** Flush any eye contact with plenty of water for at least 15 minutes. If wearing contact lenses, remove them immediately and continue flushing, occasionally lifting upper and lower lids, until no evidence of product remains. Refer to physician if irritation or symptoms persist.**Skin:** Flush any skin contact with plenty of water for at least 15 minutes while removing contaminated clothing. Wash with soap or mild detergent and water until no evidence of product remains. Refer to physician if irritation or symptoms persist.**Ingestion:** Do not induce vomiting unless performed by qualified medical personnel. Immediately call Poison Control Center or physician for guidance. Never give anything by mouth if patient is unconscious. Obtain medical attention immediately.**Inhalation:** In case of excessive inhalation, or if exposed to excess concentrations of vapor, remove subject to fresh air. If breathing stopped, begin artificial respiration. Keep victim warm and at rest. Oxygen may be administered only by qualified medical personnel. Seek medical attention if symptoms persist.**Note to physicians**

No specific antidote. Treatment may vary with condition of victim and specifics of incident. Treat symptomatically and supportively.

**Section 5 - FIRE FIGHTING MEASURES****Flammable properties****Flammability:** SERIOUS HAZARD: Material can be ignited under almost all-ambient temperature conditions. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back. May produce hazardous atmospheres with air under almost all-ambient temperatures.**Flash point and method:** ..... -7°C (20°F) Closed-cup; Hexane**Upper explosion limit (% by volume):** ..... 7.5%; Hexane**Lower explosion limit (% by volume):** ..... 1.1%; Hexane**Autoignition temperature:** ..... 225°C (437°F); Hexane**Hazardous combustion products:** ..... Toxic oxides of carbon.**Fire and explosion hazard****Sensitivity to static discharge:** ..... Due to low electroconductivity, material can accumulate static charges which can cause an incendiary electrical discharge. Use proper grounding procedure.**Sensitivity to mechanical impact:** ..... Not Applicable**Extinguishing media:** ..... Dry chemical, carbon dioxide, water spray or regular foam.

## **Fire fighting instructions**

Avoid breathing hazardous vapors, keep upwind. Protect fire fighters from toxic products of combustion by wearing self-contained breathing apparatus (SCBA) and full fire-fighting turn-out gear (Bunker gear). Closed containers in a fire may rupture due to pressure build-up. Cool containers with flooding quantities of water.

## **Section 6 - ACCIDENTAL RELEASE MEASURES**

### **Leak and spill procedure**

Remove all sources of ignition. Extinguish open flames or heat producing equipment. Stop leak without risk. Ventilate area of spill or leak. If using mechanical ventilation, make sure that it is explosion-proof or does not present an ignition source.

Keep unnecessary people away. Isolate hazard area and restrict entry. Personnel involved in clean-up should wear personal protective equipment to prevent skin, eye and respiratory exposure. Wear boots to prevent contact with shoes. For exposures above TLV, wear NIOSH/MSHA approved respiratory equipment.

Contain spill, preventing it from entering sewer lines or waterways. Use clay, or other inert absorbent, to assist with the pick-up of material. Place material in clean, dry containers for reclamation or later disposal. Observe suitable housekeeping procedures. Residual of product can be cleaned up with warm soapy water.

## **Section 7 - HANDLING AND STORAGE**

### **Handling procedures and equipment**

Vapours are flammable and are heavier than air. Use precautions that are common with the safe handling of flammable liquids. Prohibit smoking and eliminate all other sources of ignition, such as regular electrical tools and appliances. Make sure that pilot lights on gas-fired water heaters are extinguished.

Avoid eye and skin contact, and breathing of vapor. Use with adequate ventilation. Prevent buildup of vapors - open all windows and doors - use only with cross-ventilation. Close container after use.

Good hygienic practices should be observed. Wash thoroughly with soap and water before eating, drinking, smoking, or using toilet facilities. Launder contaminated clothing before reuse. Do not take internally. Use only as directed on label. Keep out of the reach of children.

### **Storage requirements**

Store in cool, dry and well ventilated area suitable for flammable liquids and away from incompatibles. Protect containers from physical damage. Recommended storage temperature is above 16°C (60.8°F) and below 27°C (80.6°F).

## **Section 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**

### **Engineering controls**

Use natural cross-ventilation, local (mechanical) pick-up, and/or general area (mechanical) ventilation to prevent an accumulation of solvent vapors. The ventilation pattern must remove the heavier-than-air solvent vapors from the lower levels of the workspaces and should be sufficient to keep total vapor concentration below the exposure limits.

### **Personal protective equipment**

**Eye/face protection:** Avoid contact with eyes and face. During the handling of this material, spectacle-type safety glasses are recommended to prevent contact with this product.

**Skin protection:** Avoid prolonged contact with skin. During the handling of this material, impervious clothing and gloves are recommended to prevent contact with this product.

**Respiratory protection:** Avoid prolonged breathing of vapor. Normal ambient air circulation or ventilation is usually adequate and respiratory protective equipment should not be required. If adequate ventilation is not afforded, wear NIOSH/MSHA approved respiratory equipment for organic vapors.

**General:** Where there is any possibility that an employee's eyes and/or skin may be exposed to this substance, the employer should provide an eye wash fountain and quick drench shower within the immediate work area for emergency use. Contaminated clothing should be immediately removed and not reworn until laundered.

**Exposure guidelines\***

Ingredients	Percentage (by weight)	CAS Numbers	OSHA		ACGIH	
			TWA	STEL	TWA	STEL
Hexane	35 - 37	110-54-3	180mg/m <sup>3</sup>		180mg/m <sup>3</sup>	
Acetone	25 - 27	67-64-1	1780mg/m <sup>3</sup>	2375mg/m <sup>3</sup>	1780mg/m <sup>3</sup>	2375mg/m <sup>3</sup>
Toluene	16 - 18	108-88-3	377mg/m <sup>3</sup>	565mg/m <sup>3</sup>	188mg/m <sup>3</sup>	
Magnesium oxide	1 - 3	1309-48-4	10mg/m <sup>3</sup> (total particulate)		10mg/m <sup>3</sup>	

\*For ease of reading table, empty space indicates data is "Not Available".

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

**Physical state:**.....Liquid

**Molecular weight:**.....Not Applicable

**Odour and appearance:** .....Straw colored liquid with characteristic solvent odor.

**Odour threshold:**.....64 - 244ppm; Hexane

**Specific gravity (H<sub>2</sub>O = 1):** .....0.83

**Bulk density:** .....Not Available

**Vapour pressure:**.....124mmHg @ 20°C (68°F); Hexane

**Vapour density (Air = 1):** .....3.0; Hexane

**Evaporation rate (n-Butyl acetate = 1):** .....15.8; Hexane

**Boiling point (H<sub>2</sub>O = 100°C):**.....69°C (156.2°F); Hexane

**Freezing point (H<sub>2</sub>O = 0°C):**.....Not Available

**Melting point:**.....-95°C (-139°F); Hexane

**Solubility in water:** .....0.014% @ 20°C (68°F); Hexane

**% Volatile by weight (30min @ 275°F):**.....76 - 82%

**pH:**.....Not Available

**Coefficient of water / oil distribution:** .....Not Available

**Section 10 - STABILITY AND REACTIVITY****Chemical stability**

Stable under ambient temperature and pressure.

**Conditions to avoid**

Avoid contact with heat, sparks, flames, or other sources of ignition. Vapors may be explosive. Avoid overheating of containers; containers may violently rupture in heat of fire. Do not mix with incompatibles.

**Incompatibility with other materials**

Strong oxidizing agents.

**Hazardous decomposition products**

Oxides of carbon and other toxic vapors and gases that are common to thermal degradation of organic compounds.

**Hazardous polymerization**

Hazardous polymerization has not been reported to occur under normal ambient temperatures and pressures.

## Section 11 - TOXICOLOGICAL INFORMATION

The toxicological properties of this product have not been fully investigated. The following is provided as what can reasonably be expected, and the hazard which may be present, based on available toxicological data on this product's ingredients.

### Effects of acute exposure to material

**Eyes:** WARNING - CAN CAUSE INJURY TO EYES. Avoid contact with eyes. Contact may cause irritation with redness and pain. Mild irritation resulted when rabbit eyes were exposed to 10mg of hexane. Irritation of human eyes results when exposed to 500ppm of acetone and 300ppm of toluene.

**Skin:** WARNING - CAN CAUSE SKIN IRRITATION. Avoid contact with skin. Contact may cause irritation with redness and pain. Ataxia and restlessness resulted when rabbit skin was exposed to 2mL/kg of hexane for 4 hours. Mild irritation results when rabbit skin is exposed to 500mg of acetone for 24 hours, or when exposed to 435mg of toluene.

**Ingestion:** May cause central nervous system effects, headache, nausea, vomiting, vertigo, bronchial, and general intestinal irritation with abdominal swelling and pain. May vaporize when aspirated into the tracheobronchial tree with a resultant rapid dilution of alveolar air and marked fall in its oxygen content.

**Inhalation:** Exposure to vapor concentration of 880ppm for 15 minutes may result in upper respiratory tract irritation. Exposure to vapor concentrations greater than 1000ppm may produce headache, nausea, dizziness, vertigo, coughing, numbness in the extremities, difficulty walking, excitement followed by depression, unconsciousness, pulmonary edema, cardiac arrhythmias, brain damage, cardiac arrest and death may result.

### Effects of chronic exposure to material

**Eyes:** Prolonged or repeated exposure may cause conjunctivitis.

**Skin:** Prolonged or repeated contact may cause dermatitis with drying, cracking, and erythema due to defatting of tissue. Blister formation, itching, erythema, pigmentation and pain.

**Ingestion:** Brain damage or cardiac arrest. Poisoning may affect the heart, liver, kidneys and blood. Blood levels may be cumulative when exposure is extended.

**Inhalation:** Prolonged or repeated contact may cause same effects as in acute exposure as well as memory loss, progressive weakness, aching muscles, sensory loss in feet and hands, calf cramps, facial numbness, impotence, blurred vision, color vision abnormalities, and paralysis of muscles usually of lower limbs.

**Subchronic:** Depending on the concentration and duration of exposure, repeated or prolonged exposure to vapor concentrations may cause irritation of the respiratory tract, eyes and skin.

**Carcinogenicity:** The ingredients of this product are not classified as carcinogenic by the American Conference of Governmental Industrial Hygienists (ACGIH) or the International Agency for Research on Cancer (IARC), not regulated as carcinogens by the Occupational Safety and Health Administration (OSHA), and not listed as carcinogens by the National Toxicology Program (NTP).

**Reproductive toxicity:** Lowest published concentration (TLC) of hexane is 1000ppm resulting in significantly depressed postnatal growth of pups born to pregnant rats exposed for 6 hours/day on days 8 to 16 of gestation.

**Teratogenicity:** Not Available

**Mutagenicity:** Mutagenic data reported in RTECS for hexane, acetone and toluene.

### Synergistic materials

The manufacturer, or supplier, of this product is not aware of any toxic synergism's between hazardous and non-hazardous ingredients ("Toxic" and "Non-Toxic" as defined under CPR).

## Section 12 - ECOLOGICAL INFORMATION

### Ecotoxicity

Not Available

### Environmental fate

**Biochemical oxygen demand (BOD):**..... Not Available

**Chemical oxygen demand (COD):**..... Not Available

### Physical / chemical

**Hydrolytic stability:**..... Not Available

**Photolytic stability:**..... Not Available

## Section 13 - DISPOSAL CONSIDERATIONS

### Waste disposal

Do not reuse container. Product residual and empty container may be incinerated at approved facility. Use only approved disposal methods in accordance with all federal, provincial, and local waste disposal regulations to dispose of product. Do not dispose of waste with normal garbage, or to sewer systems. Consult with local municipal officials, or provincial Ministry of the Environment office nearest to your location, for approved disposal methods.

## Section 14 - TRANSPORTATION INFORMATION

### Transportation and hazardous materials description

ADHESIVES, LIMITED QUANTITY, class 3.1, UN1133, total quantity per table below.

### Special shipping information

Ensure that all containers have appropriate lids and are securely closed. This product is packaged in the following sizes:

<u>Inner container (metal)</u>	<u>Quantity per box</u>	<u>Gross mass</u>
0.236L (1/2 pint US)	48	13.15kg (29 lbs.)
0.473L (1 pint US)	24	12.25kg (27 lbs.)
0.946L (1 quart US)	12	12.25kg (27 lbs.)
3.785L (1 gallon US)	4	14.97kg (33 lbs.)

Ensure that outer packages clearly display the words ADHESIVES, LIMITED QUANTITY, Flash point: <-18°C (-0.4°F) with orientation label on any side other than the side on which the package is intended to rest or be stacked during transport.

## Section 15 - REGULATORY INFORMATION

### Canadian federal regulations

#### Hazardous Products Act

#### Workplace Hazardous Material Information System (WHMIS)

This material is a controlled product which meets the hazard criteria as a B2 "Flammable Liquid", D2B "Toxic material causing other chronic effects" per the CPR (Sections 34 - 66).

This MSDS contains all of the information required by the CPR (Sections 12 - 13).

#### Consumer Chemicals and Containers Regulations (CCCR)

This material is packaged as a commercial product and is not regulated under sections of the CCCR.

**Transportation of Dangerous Goods Act**

**Transportation of Dangerous Goods Regulations (TDG)**

Flammable liquids included in Class 3 pursuant to section 3.12 that are viscous and have a flash point less than 23°C may be included in Packing Group III if after the flammable liquids have been tested in accordance with the solvent separation test set out in Part IV of Schedule VI, the upper separated layer of clear solvent represents less than 3 per cent of the quantity being tested (Section 3.14 (2 - 2a)). Flammable liquid does not separate from this product when it is tested in accordance with the solvent separation test set out in Part IV of Schedule VI.

The inner and outer packaging of this product meet the standard set out in Table 4 of Part II of Schedule VIII. As such and in respect of transportation by any means of transport other than aircraft, outer packages of this product must visibly display appropriate labels (Section 2.7.1, a - d):

**ADHESIVES, LIMITED QUANTITY**

Flash point: <-18°C (<-0.4°F)



**Canadian Environmental Protection Act (CEPA)**

Ingredients contained in this product are listed in the Domestic Substances List (DSL), and acceptable for use under the provisions of CEPA.

**International regulations**

**Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)**

Any accidental release of this material equal to or greater than the reportable quantities must be immediately reported to the National Response Center (NRC) at (800)424-8802 or (202)426-2675 in the metropolitan Washington D.C. area (40 CFR 302.40).

	<u>Reportable Quantity (RQ)</u>
Hexane	45.36kg (100 lbs.)
Acetone	2268kg (5000 lbs.)
Toluene	453.6kg (1000 lbs.)

**Superfund Amendments and Reauthorization Act (SARA)**

Section 304 requires that any accidental release of this material equal to or greater than the reportable quantities must be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40).

**Toxic Substances Control Act (TSCA)**

All ingredients contained in this product are listed in the TSCA Inventory, and acceptable for use under the provisions of the Environmental Protection Act (EPA).

## Section 16 - OTHER INFORMATION

### Label information

WHMIS Label:

#### **Warning!**

**Extremely flammable.**

**Causes irritation.**

#### **Precautions:**

Keep away from heat, sparks and flame. Ground containers when pouring. Avoid breathing vapor. Avoid skin or eye contact. Wear protective equipment during handling. Use with adequate ventilation.

Vapor is heavier than air and will collect in low areas and confined areas.

Do not store below 16°C (60.8°F) or above 27°C (80.6°F).

#### **First Aid:**

If inhaled, remove victim to fresh air. Obtain medical attention if irritation persists.

For eye contact, flush with running water for at least 15 minutes call physician.

For skin contact, wash with soap and water while removing contaminated clothing. Call physician if irritation persists.

If ingested, do not induce vomiting. Obtain medical attention.

Keep out of reach of children.

REFER TO MATERIAL SAFETY DATA SHEET FOR FURTHER INFORMATION.

Side panel:

### **Armaflex 520 ADHESIVE**

#### **FOR INDUSTRIAL AND PROFESSIONAL USE ONLY**

**DIRECTIONS: MIX WELL - FOR BEST RESULTS apply at temperatures above 4°C (40°F) and not on heated surfaces.**

1. Surface must be clean, dry and oil-free.
2. Coat both surfaces to be bonded with an adequate but thin, even film.
3. Allow adhesive to dry to touch but tacky under slight pressure. Avoid open time over 10 minutes.
4. Apply moderate pressure to entire bond area, insuring complete contact.
5. Use care on assembly. Armaflex 520 Adhesive bonds instantly, and parts cannot be moved once contact is made.
6. Allow adhesive bonds with Armaflex® to cure a minimum of 36 hours before turning heat into pipe lines. Where Armaflex Sheet insulation is bonded to large surfaces with complete adhesive coverage, allow a minimum of 7 days before subjecting the adhesive to heat.
7. Discard container - Do not reuse.

**COVERAGE** per gallon: Up to 26 sq. meters (200 Sq..Ft.) max., single coat, depending on porosity of materials to be bonded and air temperature.

### **Hazard rating and rating systems**

#### **Hazardous Materials Identification System (HMIS)**

This information is intended solely for the use of individuals trained in this particular system.

HEALTH = 2\*. Moderate Hazard. Temporary or minor injury may occur. Presence of chronic effects.

FLAMMABILITY = 3. Serious Hazard. Materials capable of ignition under almost all-normal temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all-ambient temperatures.

REACTIVITY = 0. Minimal Hazard. Materials which in themselves are normally stable, even under fire exposure conditions and which are not reactive with water.

PERSONAL PROTECTION = G. Spectacle-type safety glasses, impervious gloves, and NIOSH/MSHA approved respiratory equipment for organic vapors are considered as minimum equipment for personal protection, and recommended only for normal and intended conditions of product use with adequate ambient air circulation or ventilation.



## Preparation and revision information

**Prepared by:** Michael Resetar  
Armacell LLC  
7600 Oakwood Street Extension  
Mebane, NC 27302

Tel: (919)304-3846, Monday - Friday (8:00 - 16:30 Eastern Time)  
Fax: (919)304-3720, 24 Hours

**Effective date:** February 8, 2011

**Supersedes date:** January 18, 2008

THE INFORMATION PRESENTED HEREIN IS SUPPLIED AS A GUIDE TO THOSE WHO HANDLE OR USE THIS PRODUCT AND HAS BEEN PREPARED IN GOOD FAITH BY TECHNICALLY KNOWLEDGEABLE PERSONNEL. IT IS NOT INTENDED TO BE ALL - INCLUSIVE. THE MANNER AND CONDITIONS OF USE AND HANDLING MAY INVOLVE OTHER AND ADDITIONAL CONSIDERATIONS. SAFE WORK PRACTICES MUST BE EMPLOYED WHEN WORKING WITH ANY MATERIALS. IT IS IMPORTANT THAT THE END USER MAKES A DETERMINATION REGARDING THE ADEQUACY OF THE SAFETY PROCEDURES EMPLOYED DURING THE USE OF THIS PRODUCT.

NO WARRANTY OF ANY KIND IS GIVEN OR IMPLIED. ARMACELL LLC, WILL NOT BE LIABLE FOR ANY DAMAGES, LOSSES, INJURIES OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM THE USE OR RELIANCE ON ANY INFORMATION CONTAINED HEREIN. THIS MATERIAL SAFETY DATA SHEET IS VALID FOR THREE (3) YEARS.

## Abbreviations

ACGIH = American Conference of Governmental Industrial Hygienists  
CAS = Chemical Abstracts Service  
CPR = Controlled Product Regulations, Hazardous Product Act  
IARC = International Agency for Research on Cancer  
LC<sub>50</sub> = Lethal Concentration 50  
LD<sub>50</sub> = Lethal Dose 50  
MSHA = Mine Safety and Health Administration  
NIOSH = National Institute of Safety and Health  
RTECS = Registry of Toxic Effects of Chemical Substances  
STEL = Short Term Exposure Limit  
TLV = Threshold Limit Values  
TWA = Time-Weighted Average  
WHMIS = Workplace Hazardous Materials Information System

## References

1. Material Safety Data Sheets from raw materials' suppliers
2. Hazardous Substances Data Bank (HSDB), via STN International
3. Occupational Health Services Inc. (MSDS-OHS), via STN International
4. Registry, via STN International
5. Registry of Toxic Effects of Chemical Substances (RTECS), via STN International

## Notes

This MSDS is prepared in accordance with the American National Standards Institute (ANSI) "Standard for the Preparation of Material Safety Data Sheets" (ANSI Z400.1-1993).

This MSDS is available publicly through the Canadian Center for Occupational Health and Safety (CCOHS) on CCINFODisc or electronically via the scientific and technical information network, STN International (CCOHS-MSDS).

Cette fiche signalétique est disponible en français.