

**SECTION 1 – Identification of the Substance/Mixture and of the Company/Undertaking****1.1 Product identifiers**

**Product Name:** KFILM™ 2086  
**Product Class:** Thermoplastic Polyurethane Resin  
**Manufacturer's I.D.:** KFilm 2086  
**CAS Number:** N/A – Mixture  
**Index Number:** N/A – Mixture

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Identified Uses:** Adhesion promoter for film packaging. For industrial use only.  
**Uses Advised Against:** N/A

**1.3 Details of the Supplier of the safety data sheet**

**Company:** Kane International Corporation  
411 Theodore Fremd Avenue  
Rye, NY 10580  
**Phone:** (914) 921-3100

**1.4 Emergency telephone number**

For Emergencies Involving a Spill, Leak, Fire, Exposure, or Accident  
**Contact CHEMTREC (800) 424-9300**

**SECTION 2 – Hazards Identification****2.1 Classification of the Substance or Mixture**

**OSHA Hazards:** Flammable liquid, target organ effect.

**Overexposure targets the following organs:** Central nervous system, eyes, gastrointestinal tract, respiratory system and skin.

**Classification according to OSHA 29 CFR 1910.1200 and Regulation (EC) No 1272/2008 [EU-GHS/CLP]**

Flammable liquids (Category 3)

Eye irritation (Category 2)

Specific target organ toxicity - single exposure (Category 3: Central nervous system)

**See Sections 15.3 and 15.4 for additional comments concerning the classification of this product.**

**2.2 Label Elements**

**GHS Label Elements, including precautionary statements:**

**Pictogram**



**Signal Word** Warning

**Hazard Statement(s)**

H225 Highly flammable liquid and vapor.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness

**Precautionary Statement(s)**

P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking.

P240 Ground / bond container and receiving equipment.

P242 Use only non-sparking tools.

P370 + 378 In case of fire: Use water spray, carbon dioxide, dry chemical or foam for extinction.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305 + 351 + 338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P304 + 341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

**Supplemental Hazard Information (EU)**

EUH066 Repeated exposure may cause skin dryness or cracking.

**Hazard Symbol(s):**

F Highly flammable  
Xn Harmful

**R-Phrases:**

R11 Highly flammable.  
R36 Irritating to eyes.  
R66 Repeated exposure may cause skin dryness or cracking  
R67 Vapours may cause drowsiness and dizziness.

**S-Phrases:**

S16 Keep away from sources of ignition - No smoking.  
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S33 Take precautionary measures against static discharges.

**2.3 Other Hazards**

None

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**SECTION 3 – Composition / Information on Ingredients**

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**3.1 Substances**

**Formula:** Mixture, proprietary

**Molecular Weight:** Mixture, proprietary

**3.2 Mixtures****Description of the mixture:**

Thermoplastic polyurethane resin dispersed in a mixture of solvents

**Summary of Information Included:**

All hazardous constituents with a concentration of 1% or greater, or 0.1% or greater if the constituent is a PBT/vPvB substance or otherwise required by the OSHA Hazard Communication Standard, are listed in Section 3.2.1 below. Other (non-hazardous) ingredients are listed in Section 3.2.2 for the purpose of accounting for 100% of the mixture. This is the only section of the SDS that lists non-hazardous constituents.

Information listed as “proprietary” is being withheld as a trade secret or confidential business information. Regardless, the properties and effects of all known hazardous ingredients are included as applicable in each section of this Safety Data Sheet.

The classification hazard(s) of each of the hazardous ingredients is provided in Section 3.2.3, along with the reason(s) for listing the chemical as hazardous. Refer to Sections 15.3 and 15.4 for additional information concerning any pending registrations or the justification for the classification.

**3.2.1 Hazardous Ingredients**

<u>Ingredient</u>	<u>CAS #</u>	<u>EC #</u>	<u>Index #</u>	<u>Wt %</u>	<u>Synonyms</u>
Ethyl Alcohol	64-17-5	200-578-6	603-002-00-5	38.0%	Ethanol
Ethyl Acetate	141-78-6	205-500-4	607-022-00-5	12.0%	Acetic acid, ethyl ester

**3.2.2 Other (Non-Hazardous) Ingredients**

<u>Ingredient</u>	<u>CAS #</u>	<u>EC #</u>	<u>Index #</u>	<u>Wt %</u>	<u>Synonyms</u>
Polyurethane Resin	Proprietary	--	--	50.0%	N/A

**3.2.3 Classification \***

<u>Ingredient</u>	<u>CAS #</u>	<u>Reason Listed</u>	<u>Classification per 67/548/EEC</u>	<u>Classification per Regulation (EC) No. 1272/2008 (CLP)</u>
Ethyl Alcohol	64-17-5	1,2	F; R11	H225 (2)
Ethyl Acetate	141-78-6	1,2	F; R11; Xi; R36, R66, R67	H225 (2), H319 (2), H336 (3)

- 1 Substance is classified with a health or environmental hazard
- 2 Substance has a workplace exposure limit
- 3 Substance meets the criteria for PBT per Regulation (EC) No. 1907/2006, Annex XIII
- 4 Substance meets the criteria for vPvB per Regulation (EC) No. 1907/2006, Annex XIII

\* See Sections 15.3 and 15.4 for a discussion of the classification determination and European Union requirements.

**SECTION 4 – First Aid Measures****4.1 Description of first aid measures**

**Inhalation Overexposure:** Remove to fresh air. If breathing stops, apply artificial respiration and seek immediate medical attention. If breathing is difficult, give oxygen and seek medical attention.

**Eye Contact:** Flush with large quantities of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention. In case of irritation from airborne exposure, move to fresh air. Get medical attention if symptoms persist.

**Skin Contact:** Wash affected skin with soap and water for 15 minutes. Get medical attention if symptoms occur. Remove contaminated clothing and shoes. Wash clothing before reuse. Destroy or thoroughly clean shoes before reuse.

**Ingestion:** DO NOT induce vomiting. Have victim rinse mouth out with water, and then drink sips of water to remove taste from mouth. Never give anything by mouth to an unconscious person. Get medical attention as needed.

**4.2 Most important symptoms and effects, both acute and delayed**

Repeated or prolonged contact can cause skin irritation, redness, and drying. Eye contact can cause moderate to severe irritation, redness, or swelling. Inhalation of mist or vapors causes irritation to eyes, nose, and throat.

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available on other exposure. Treat symptomatically.

**SECTION 5 – Firefighting Measures****5.1 Extinguishing Media****Suitable Extinguishing Media:**

Use carbon dioxide or dry chemical for small fires. Use aqueous foam or water for larger fires. For large fires, water should be applied from as far away as possible. Water should be applied in very large quantities as a mist or spray; solid streams of water may be ineffective.

**5.2 Special hazards arising from the substance or mixture**

Sealed containers may rupture when exposed to fire or excessive heat due to build-up of pressure

**5.3 Advice for firefighters****Special Fire Fighting Procedures:**

Remove all ignition sources from affected and potentially affected areas. Use water to cool fire-exposed structures and containers.

**Special Protective Equipment**

Fire fighters should wear self-contained breathing apparatus and complete personal protective equipment operated in a pressure demand or other positive pressure mode.

**SECTION 6 – Accidental Release Measures****6.1 Personal precautions, protective equipment and emergency procedures**

Wear appropriate protective clothing to prevent unnecessary skin contact and to avoid overexposure to vapors. Use non-sparking tools and equipment.

**6.2 Environmental precautions**

Prevent runoff from entering drains, sewers, streams or other waterways.

**6.3 Methods and material for containment and cleaning up**

Ventilate the spill area. Dike spill area, soak up with a non-combustible absorbent material, and place in a closed container.

**Notification and reporting**

Spills or releases to the environment may be reportable. See Section 15 for United States federal reporting requirements. For all other locations, consult appropriate regulations to determine possible reporting requirements prior to using this product.

**SECTION 7 – Handling and Storage****7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapors and mists. Use in cool, well-ventilated area. Minimize the amount of vapor present by keeping containers closed when not in use and handling in an enclosed system where possible. Ground containers or take other measures to prevent the build-up of a static charge.

**7.2 Conditions for safe storage, including any incompatibilities**

Store in a cool location. Keep away from excessive heat and open flames.

**7.3 Specific end uses**

Ingredient in the formulation of solvent based packaging inks and coatings

**SECTION 8 – Exposure controls / personal protection****8.1 Control parameters**

Hazardous Ingredients			Workplace Control Parameters <sup>1</sup>			
<u>Ingredient</u>	<u>CAS #</u>	<u>Wt %</u>	<u>OSHA PEL</u>	<u>OSHA STEL</u>	<u>ACGIH TWA</u>	<u>ACGIH STEL</u>
Ethyl Alcohol	64-17-5	38.0%	1,000 ppm	N/A	1,000 ppm	N/A
Ethyl Acetate	141-78-6	12.0%	400 ppm	N/A	400 ppm	N/A

<sup>1</sup> Workplace control parameters may vary. Please consult the listing for the country where this product will be used to determine the relevant exposure limits.

"N/A" = Information is Not Available

"C" = Ceiling limit value

**8.2 Exposure Controls****Appropriate engineering controls**

Use local exhaust if necessary to maintain concentrations well below exposure limits. Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the work day.

**Personal protective equipment**

**Eye Protection:** Chemical splash goggles. Wear a full face shield if splashing is possible to prevent unnecessary eye contact.

**Skin (Hand) Protection:** For operations where contact can occur, wear impervious gloves to avoid unnecessary skin contact. Review published literature and glove manufacturer data to determine suitable gloves. Glove suitability and



breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for anticipated use conditions.

**Skin (Body) Protection:** Wear impervious clothing as necessary to prevent unnecessary skin contact.

**Respiratory Protection:** Use a properly fitted organic vapor or self-contained breathing apparatus appropriate to the manner in which the product is handled where excessive vapor, mists or aerosols are present. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Other Protective Equipment:** For operations where contact can occur, a safety shower and eye wash facility should be available.

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## SECTION 9 – Physical and chemical properties

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### 9.1 Information on basic physical and chemical properties

#### Appearance

**Physical State:** Liquid

**Form:** Liquid

**Color:** Light yellow; clear

**Odor:** Characteristic solvent odor

**Odor Threshold:** Not determined

**pH:** No data available

**Melting Point:** No data available

**Boiling Range:** 76.5-102°C (169.7-215.6°F)

**Flash Point:** -3°C (26.6°F) CC

**Autoignition Temperature:** No data available

**Decomposition Temperature:** No data available

**Lower Explosion Limit (LEL):** 1.7% (estimated)

**Upper Explosion Limit (LEL):** 19.0% (estimated)

**Vapor Pressure at 20 °C:** 51.42 mm Hg (estimated)

**Vapor Density:** Heavier than air

**Density (Specific Gravity):** 7.70 ± 0.15 lbs/gallon (0.924 g/mL)

**Solubility in Water:** The resin (50.0%) is insoluble in water. The solvent constituents (50.0%) are soluble in water.

**Partition Coefficient (n-octanol / water):** No data available

**Dynamic Viscosity:** 2,000 – 3,000 mPa s (cps) @ 20 °C

**Kinematic Viscosity:** 259.74 – 389.61 mm<sup>2</sup> / s @ 20 °C (calculated)

**Explosive Properties:** No data available

**Oxidizing Properties:** No data available

#### Other Information

**Evaporation Rate:** Slower than Butyl Acetate

**Percent Volatile by Weight:** 50.0%

**VOC:** 461.75 g/l

### 9.2 Other safety information

No data available

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## SECTION 10 – Stability and reactivity

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**10.1 Reactivity:** None known

**10.2 Chemical stability:** Stable

**10.3 Possibility of hazardous reactions:** Hazardous polymerization will not occur

**10.4 Conditions to avoid:** Excessive heat, sparks, or open flame.

**10.5 Incompatible materials:** Strong oxidizing agents.

**10.6 Hazardous decomposition products:** Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

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**SECTION 11 – Toxicological information**

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**11.1 Information on toxicological effects**

This product has not been tested for acute or chronic toxicological effects. The toxicological information presented below is for the product components:

**ACUTE TOXICITY:****Ethyl Alcohol, CAS# 64-17-5**

LD<sub>50</sub> (Oral, Rat)  
7,060 mg/kg

LC<sub>50</sub> (Inhalation, Rat)  
20,000 ppm (10 hrs)

Irritation (Skin, Rabbit)  
24 hrs – No irritation

**Ethyl Acetate, CAS# 141-78-6**

LD<sub>50</sub> (Oral, Rat)  
5,620 mg/kg

LC<sub>50</sub> (Inhalation, Mouse)  
45,000 mg/m<sup>3</sup> (2 hrs)

LD<sub>50</sub> (Skin, Rabbit)  
> 180,000 mg/kg

**EFFECTS OF OVEREXPOSURE**

**Vapors:** Mist or vapors causes irritation to eyes, nose, and throat. Excessive exposure may result in headache, dizziness, nausea, drowsiness and slurred speech.

**Skin Contact:** Solvent components degrease the skin. Repeated or prolonged contact can cause minor to moderate skin irritation, drying, and cracking.

**Eye Contact:** Contact can cause moderate to severe irritation, including tearing, burning sensation, redness, or swelling.

**Ingestion:** May be harmful if swallowed.

**Medical Conditions Prone To Aggravation By Exposure:** Respiratory tract irritation, dermatitis, nausea, and vomiting.

**Primary Routes of Entry:** Inhalation, Skin Contact, Absorption through the skin.

**Carcinogenicity: NTP (Known):** No; **NTP (Anticipated):** No; **IARC Category:** No; **OSHA:** N/A

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**SECTION 12 – Ecological information**

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**12.1 Toxicity**

No information is available concerning ecological data for this product. The information presented below is for the product components.

**Ethyl Alcohol, CAS# 64-17-5**

Test type: LC<sub>50</sub> (Fish)  
No data available

Test type: EC<sub>50</sub> (Invertebrates)  
No data available

Test type: EC<sub>50</sub> (Algae)  
No data available

**Ethyl Acetate, CAS# 141-78-6**

Test type: LC<sub>50</sub> (Fish)  
Time: 96 hr  
Species: Fathead minnow  
Value: 220 – 250 mg/l

Test type: LC<sub>50</sub> (Invertebrates)  
Time: 48 hr  
Species: Daphnia magna  
Value: 560 mg/l

Test type: EC<sub>50</sub> (Algae)  
Time: 24 hr  
Species: Algae  
Value: 4,300 mg/l

**12.2 Information on toxicological effects:** No data available

**12.3 Bioaccumulative potential:** No data available

**12.4 Mobility in soil:** No data available

**12.5 Results of PBT and vPvB assessment:** No data available

**12.6 Other adverse effects:** No data available.

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**SECTION 13 – Disposal considerations**

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**13.1 Waste treatment methods**

Incinerate in an approved incinerator or dispose of according to applicable local, state / provincial, and federal regulations

**General information**

Dispose of according to all applicable local, regional and national laws or regulations. Use appropriately licensed disposal services to manage this flammable liquid. Do not reuse empty containers.

**Empty containers:**

Empty containers which have not been cleaned possess residual product and should be handled in the same way as full containers of this product. Recipients of these containers must be warned of the possible hazard(s) that may be caused by product residues.

**RCRA (United States) INFORMATION:**

Since this product is not sold as waste, we have not tested it as a waste. Based on our knowledge of the product, its raw materials and processes employed during its manufacture, we believe that this product could be considered to be a RCRA ignitable waste, D001. We recommend that you carry out your own tests and evaluations prior to discarding any materials and that any waste is disposed of in accordance with all applicable federal, state or provincial, and local regulations

**European Waste Codes:**

Since this product is not sold as waste, we have not tested it as a waste. We recommend that you carry out your own tests and evaluations prior to discarding any materials and that any waste is disposed of in accordance with all applicable national, state or provincial, and local regulations

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**SECTION 14 – Transportation information (*not meant to be all inclusive*)**

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Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult the appropriate regulation(s) for information specific to the shipment to be made.

**US Department of Transportation (DOT)**

DOT Shipping Name: Resin solution

DOT Hazard Class: 3

DOT UN/NA Number: UN1866

DOT Label(s): Flammable Liquid

Packing Group: II

**Transport Canada Transportation of Dangerous Goods (TDG)**

Shipping Name and Description: Resin solution, flammable

UN Number: UN1866

Class: 3

Packing Group: II

**IATA**

Shipping Name and Description: Resin Solution

UN Number: UN1866

Class: 3

Packing Group: II

Subrisk: N/A

Inhalation Packing Group I: No

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**SECTION 15 – Regulatory information (*not meant to be all inclusive*)**

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**15.1 UNITED STATES**

**TSCA [Toxic Substances Control Act]:** This product complies with all TSCA inventory requirements.

**SARA Section 313:** *This product contains the following chemical(s) subject to the reporting requirements of Section 313 of the Emergency Planning and Community Response Act of 1986 and of 40 CFR 372. This information must be included in all MSDSs that are copied and distributed for this material.*

<u>Component</u>	<u>CAS#</u>	<u>Wt %</u>
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No components > 1% by weight or 0.1% by weight for carcinogens



**SARA Section 311 and 312:**

SARA Section 311 and 312 hazard classification(s) for this product are listed below.

Immediate (acute) health hazard  
Delayed (chronic) health hazard  
Fire hazard

**SARA Section 302 and 304:**

This product contains the following Extremely Hazardous Substances (EHS) subject to the emergency planning and release reporting requirements of Sections 302 and 304 of the Emergency Planning and Community Response Act of 1986 and of 40 CFR 355:

No listed chemicals

**CERCLA Information: Releases to air, land, or water which exceed the reportable quantity must be reported to the National Response Center (800-424-8802).**

This product contains the following chemical(s) subject to CERCLA reporting requirements:

<u>Component</u>	<u>CAS#</u>	<u>RQ</u>	<u>Wt %</u>
Ethyl Acetate	141-78-6	5,000 lbs	12.0%

Because this product is a mixture, the total amount released would need to exceed 41,666 pounds (5,411 gallons) before a reportable quantity of 5,000 pounds of Ethyl Acetate was released.

**CALIFORNIA PROP - 65**

This product contains the following ingredient(s) known to the state of California to cause cancer, birth defects or other reproductive harm:

<u>Component</u>	<u>CAS#</u>	<u>Amount</u>
None known to be present		

**Additional Right-To-Know Composition Information**

This product contains the following ingredients which appear on other hazardous substance or ingredient disclosure lists.

<u>Component</u>	<u>CAS#</u>	<u>Wt %</u>	<u>Lists</u>
Ethyl Alcohol	64-17-5	38.0%	CN, MA1, MA2 (T1), NJ1, NJ2 (CA, MU, TE, F3) PA1
Ethyl Acetate	141-78-6	12.0%	CN, MA1, MA2 (F8), NJ1, NJ2 (F3) PA1, PA2 (E)

**CN**=Canadian Ingredient Disclosure List **MA1**=Massachusetts Hazardous Substances List **MA2**=Massachusetts Extraordinary Hazardous Substances List **NJ1**=New Jersey Workplace Hazardous Substances List **NJ2**=New Jersey Special Health Hazards List (NJ2 Category) **NL**=Not listed, Concentration Based Disclosure **PA1**=Pennsylvania Hazardous Substances List **PA2**=Pennsylvania Special Hazardous Substances List

**15.2 CANADA**

**WHMIS:** This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

**Domestic Substances List (DSL) Status:** All components of this product are included on the Canadian DSL or NDSL lists.

**15.3 EUROPEAN UNION**

This safety datasheet has been prepared according to the requirements of Regulation (EC) No. 1907/2006 and 1272/2008. All solvent ingredients are listed on the REACH registry and the resin ingredients are pre-registered as per the requirements for polymers.

This product is a mixture of solvents and resins. Although it has not been tested as a mixture, the physical, acute, and chronic hazards are believed to be those of the solvent constituents, unless described otherwise in the procedure used to derive the classification. The published information for these constituents has been included in Section 3, Section 11, and Section 12. The resin is currently being evaluated in accordance with the established timelines and applicable data will be included when available.

**15.4 EVALUATION OF HAZARDS****Procedure used to derive the classification:**

The known data for the for the hazardous constituents listed in Section 3 was evaluated to classify the mixture in accordance with the methods in 29 CFR 1910.1200, Appendices A and B and CLP Annex I, Part 3 and Part 4.

Based on the application of the bridging principles in Appendix A to 29 CFR 1910.1200 A.3.4.3.4 and Table A.3.3 and Table A.3.4 and Annex 1 of CLP1272/2008 section 3.3.3.3.4.1 and Table 3.3.3 and Table 3.3.4, the product is classified as causing serious eye irritation (category 2) because it contains greater than 10% (50.0% total) of category 2 constituents.



Based on the application of the bridging principles in Appendix A to 29 CFR 1910.1200 A.8.3.4.5 and Annex 1 of CLP1272/2008 section 3.8.3.4.5, the product is classified as causing specific target organ toxicity single exposure (category 3) because it contains greater than 20% (50.0% total) of category 3 constituents and these constituents are 100% of the vapor from this product.

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## SECTION 16 – Other information

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### Additional Hazard Classifications:

#### HMIS CLASSIFICATION

Health hazard	2
Flammability	3
Physical hazard	0
Protective equipment	G

#### NFPA RATING

Health hazard	2
Fire	3
Reactivity hazard	0

**Date Issued:** 05/20/2015

**Supersedes:** New

### Disclaimer:

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To the best of our knowledge the information contained herein is accurate. However no liability is assumed for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein we cannot guarantee that these are the only hazards that exist.

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