Material Safety Data Sheet

Nomex® Aramid Paper & Pressboard

Version 3.1

Revision Date 03/06/2009 Ref. 150000002637

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Nomex® Aramid Paper & Pressboard
MSDS Number : 150000002637
Manufacturer : DuPont
1007 Market Street
Wilmington, DE 19898

Product Information : 1-800-931-3456
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

Other information : OSHA Hazard Communication Standard (29 CFR 1910.1200) requirements for Material Safety Data Sheets do not apply to this product. This product is excluded as an article. Information on potential hazards associated with product fabrication and/or installation are discussed in this datasheet.

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview
The hazards of this product are associated mainly with its processing. Dust may form explosive mixture in air. High concentrations of dust can irritate eyes, nose and respiratory system and cause coughing and sneezing. Processing meta-aramid products can release Dimethyl Acetamide (DMAC). Hazards related to DMAC include: May be harmful by inhalation (after often repeated exposure). May be harmful in contact with skin (after often repeated exposure). Liver and kidney injuries may occur.

Potential Health Effects
Carcinogenicity
None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meta-aramid paper or meta-aramid paper with additives</td>
<td></td>
<td>100 %</td>
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</table>

Exposure limits may be applicable for the following :

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meta-aramid</td>
<td>25765-47-3</td>
</tr>
<tr>
<td>N,N-Dimethylacetamide</td>
<td>127-19-5</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice : No hazards which require special first aid measures. If symptoms persist, call a physician. If irritation occurs, flush area thoroughly with water.
SECTION 5. FIRE-FIGHTING MEASURES

Flammable Properties

- Flash point: not applicable
- Thermal decomposition: > 300 °C (> 572 °F)
- Fire and Explosion Hazard: Hazardous decomposition products formed under fire conditions.

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

Firefighting Instructions: Wear self contained breathing apparatus for fire fighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel): None.

Spill Cleanup: Avoid dust formation. Use approved industrial vacuum cleaner for removal.

Accidental Release Measures: Do not let product enter drains.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel): Avoid dust formation. Avoid breathing dust or vapor.

Storage: Keep away from direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: Ensure adequate ventilation. Recirculated air should be filtered to remove respirable dust. Provide for appropriate exhaust ventilation and dust collection at machinery. Static charges can cause explosions in solvent and dust laden atmospheres. Provide grounding of equipment to prevent static build-up.

Personal protective equipment
- Respiratory protection: When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Eye protection: Safety glasses with side-shields

Exposure Guidelines

Exposure Limit Values
Dust (inhalable and respirable fraction)

PEL (OSHA) 5 mg/m³ 8 hr. TWA Respirable fraction.
PEL (OSHA) 15 mg/m³ 8 hr. TWA Total dust.
TLV (ACGIH) 10 mg/m³ TWA Inhalable particles.
TLV (ACGIH) 3 mg/m³ TWA Respirable particles.

Meta-aramid
AEL * (DUPONT) 10 mg/m³ 8 hr. TWA Total dust.
AEL * (DUPONT) 5 mg/m³ 8 hr. TWA Respirable dust.

N,N-Dimethylacetamide
PEL (OSHA) 10 ppm 35 mg/m³ 8 hr. TWA
Skin designation
Skin designation
TLV (ACGIH) 10 ppm TWA
AEL * (DUPONT) 10 ppm 8 & 12 hr. TWA, Skin

* AEL is DuPont’s Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form : sheets, tape, roll
Color : white, grey, tan
Odor : none
Melting point/range : not applicable
Water solubility : insoluble

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid : Temperature > 200 °C (> 392 °F)
Heating can release hazardous gases.
Incompatibility : Strong acids and strong bases
Hazardous decomposition products : Hazardous decomposition products Carbon monoxide, nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid)

SECTION 11. TOXICOLOGICAL INFORMATION

Meta-aramid
Oral ALD : > 11,000 mg/kg, rat
Inhalation ALC : > 238 mg/m³, rat lung effects
Skin irritation: non-irritant

Skin sensitization: Patch test on human volunteers did not demonstrate sensitization properties.

Carcinogenicity: Did not show carcinogenic effects in animal experiments.

**N,N-Dimethylacetamide**

Dermal LD50: 2,240 - 9,600 mg/kg, animals (unspecified species)

Oral LD50: 3,000 - 6,000 mg/kg, rat

Inhalation 1 h LC50: 8.81 mg/l female, rat
Value applicable only if respirable particles are formed.

Inhalation 4 h LC50: 2.2 mg/l female, rat

Skin irritation: Species: rabbit Irritating to skin., Mild skin irritation

Eye irritation: Species: rabbit Irritating to eyes., Mild eye irritation

Skin sensitization: Species: guinea pig, Did not cause sensitization on laboratory animals.
Species: human, Patch test on human volunteers did not demonstrate sensitization properties.

Repeated dose toxicity:
Dermal: Central nervous system depression, Liver effects, Skin effects

Oral: Pathologic changes, Stomach, Testes, Liver, Kidney, Abnormal decrease in number of red blood cells

Inhalation: Kidney effects, Liver effects, Retinal damage

Carcinogenicity: Did not show carcinogenic effects in animal experiments.

Mutagenicity: Did not cause genetic damage in cultured bacterial cells., Did not cause genetic damage in cultured mammalian cells., Evidence suggests this substance does not cause genetic damage in animals.

Reproductive toxicity: Animal testing showed no reproductive toxicity.

Teratogenicity: Animal testing showed effects on embryo-foetal development at levels equal to or above those causing maternal toxicity.
SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity
N,N-Dimethylacetamide

96 h LC50 : Fathead minnow 1,500 mg/l
72 h EC50 : Algae > 500 mg/l
48 h EC50 : Daphnia magna (Water flea) > 500 mg/l

Additional ecological information : This product has no known eco-toxicological effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal : Can be landfilled or incinerated, when in compliance with local regulations.

SECTION 14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

NZ HSNO Status : Exempt

SARA 313 Regulated Chemical(s) : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65 : Chemicals known to State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

Restrictions for use : Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract that is consistent with DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative. You may also request a copy of the DuPont POLICY Regarding Medical Applications H-50103-3 and DuPont CAUTION Regarding Medical Applications H-50102-3.

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It is recommended that additional information be requested if an unusual application of synthetic fibres is intended.
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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