1. Product and company identification

Trade Name

LAPRENE 8K1 01 A55/C

Manufacturer, importer, supplier

Ticona Polymers LTDA
Av. Edgar Hoffmeister, 275 - Anexo A
Parque Tecnológico Vale dos Sinos
CEP 93700-000 - Campo Bom - RS
Brazil
Phone: +55 51 2123 2600   Fax: +55 51 2123 2622

Transportation emergency phone numbers:
In Brazil, call +(55) – 21 3958 1449
In USA, call  800 424 9300
Outside USA, call  +001 703 527 3887, collect calls accepted.

Product Information
Brazil: 55 11 4745 8506
info-engineeredmaterials-am@celanese.com

Identified uses
Plastic processing industry.

2. Hazard Identification

Not a dangerous product according to GHS and ABNT NBR 14725-2 (2014).

Symbols:  None
Signal Word:  None
Hazard Statements:  None
Precautionary Statements:  None

3. Composition/information on ingredients

Chemical cauterization
Benzene, ethenyl-, polymer with 1,3-butadiene, hydrogenated; basic material with

Components that contribute to the hazards:  Does not present risks
Remarks
This product may contain proprietary ingredients.
This is a polymeric material. Any hazardous constituents are wetted by the polymer system, and therefore are unlikely to present exposure under normal conditions of processing and handling.

4. First aid measures

General Information
Thermal decomposition can lead to release of irritating gases and vapors.

Skin
Cool skin rapidly with cold water after contact with molten polymer. Immediate medical attention is required. Do not peel solidified product off the skin.

Eyes
Immediately flush eye(s) with plenty of water. Call a physician if irritation persists. Melted product: Quickly cool the affected area with water or ice. Immediately call a physician. Vapors released from thermal decomposition may cause eye irritation with burning and tearing.

Inhalation
Inhalation of vapors is irritating to the respiratory system, may cause throat pain and cough. Move to fresh air in case of accidental inhalation of vapors. Get medical attention immediately if symptoms occur.

Ingestion
If swallowed, do not induce vomiting - seek medical advice.

Notes to physician
This product is essentially inert and nontoxic. However, if it is heated at too high a temperature or if it is burned, gases may be released. Patients who have been exposed to off-gases may need to have their arterial blood gases and carboxyhemoglobin levels checked. If the carboxyhemoglobin levels are normal, asphyxia (carbon dioxide replacing oxygen) is a possibility. As with any fire, irritant gases may have formed. If patients may have inhaled high concentrations of irritating fumes, they should be monitored for delayed onset pulmonary edema.

Workplace vapors could produce reversible corneal epithelial edema, impairing vision. In the event of possible diisocyanate exposure, check for evidence of corneal injury. If cornea is burned, apply antibiotic/steroid preparation as needed. An individual having pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

5. Fire-fighting measures

NFPA:
Health: 1  Flammability: 0  Instability: 0

Suitable extinguishing media
Water, Foam, Dry powder, Carbon dioxide (CO2)
Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases
Thermal decomposition can lead to release of irritating gases and vapors
2,6-Diisopropylphenyl isocyanate (DIPPI)
4,4’-Diphenylmethane diisocyanate (MDI)
Amines
Aldehydes
Carbon dioxide (CO₂)
Carbon monoxide
Hydrocarbons
Nitriles
Nitrogen oxides (NOₓ)
Hydrogen cyanide (hydrocyanic acid)

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus and protective suit.

Other Information
Keep people away from and upwind of fire. Dust can form an explosive mixture in air.

6. Accidental release measures

Personal precautions
Do not breathe vapors/dust. Avoid dust formation. Ensure adequate ventilation, especially in confined areas.

Environmental precautions
Do not flush into surface water or sanitary sewer system.

Methods for cleaning up
Use mechanical handling equipment. Dispose of in accordance with local regulations.

7. Handling and storage

Advice on safe handling
Do not breathe vapor. Do not handle hot or molten material without appropriate protective equipment. Do not exceed recommended process temperatures to minimize release of decomposition products. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Maintain good housekeeping in work areas.

Protection - fire and explosion:
Do not smoke in areas where polymer dust is present. Appropriate measures should be taken to control the generation and accumulation of dust during conveying and processing operations. Take measures to prevent the build up of electrostatic charge. All equipment used when handling the product must be grounded. Ground and bond containers when transferring material.

Technical measures/Storage conditions
No special storage conditions required.

Material storage
Keep in a dry, cool place. Maintain dryness of resin. To maintain product quality, do not store in heat or direct sunlight.
Incompatible products
Strong oxidizing agents

8. Exposure controls / personal protection

OSHA Exposure Limits
This material in its supplied form does not have exposure limits. When the material is heated (i.e. during processing or thermal decomposition conditions), there is potential for the release of 2,6-Diisopropylphenyl isocyanate (DIPPI) and 4,4’-Diphenylmethane diisocyanate (MDI) vapors.

<table>
<thead>
<tr>
<th>Components</th>
<th>CEILING</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’’-methylene diphenyl diisocyanate</td>
<td>0.02 PPM</td>
</tr>
</tbody>
</table>

ACGIH Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’’-methylene diphenyl diisocyanate</td>
<td>0.005 PPM</td>
</tr>
</tbody>
</table>

Brazil Annex 11 – NR 15
No exposure limits established.

Mexico National Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>LMPE - PPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,4’’-methylene diphenyl diisocyanate</td>
<td>0.2 mg/m³ / 0.02 PPM</td>
</tr>
<tr>
<td></td>
<td>0.051 mg/m³ / 0.005 PPM</td>
</tr>
</tbody>
</table>

Exposure controls

Engineering measures
General: May not be adequate as the sole means to control employee exposure.
Local Exhaust: Recommended when appropriate to control employee exposure to dust or process vapors.

Protective equipment
A safety shower and eyewash should be readily available.

General advice
Avoid contact with skin and eyes. Do not breathe vapors/dust.

Respiratory protection
In case of insufficient ventilation wear suitable respiratory equipment.
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.
Respiratory protection must be provided in accordance with current local regulations.
Skin protection:
When thermal or melt processing, wear long pants, long sleeves, well insulated gloves, and face shield when there is a chance of contact.

Eye/face protection:
Safety glasses with side-shields. Safety goggles.

Comments:
Operations involving grinding and machining of parts should be reviewed to assure that particulate levels are kept below recommended standards.

9. Physical and chemical properties

Appearance
Form pellets
Color natural
Odor characteristic
Flash point Not applicable
Ignition Temperature > 350 °C
Decomposition Temperature > 300 °C
Melting Point 130 – 190 °C
Density 0.9 - 1.2 g/cm³
Water solubility insoluble

10. Stability and reactivity

Reactivity
Stable under normal conditions.

Conditions to avoid
Flame. Avoid prolonged heating at or above the recommended processing temperature. Keep away from direct sunlight.

Incompatible Materials
Strong oxidizing agents
Hazardous Combustion or Decomposition Products:
Thermal decomposition can lead to release of irritating gases and vapors.
- 2,6-Diisopropylphenyl isocyanate (DIPPI)
- 4,4’-Diphenylmethane diisocyanate (MDI)
- Amines
- Aldehydes
- Carbon monoxide
- Carbon dioxide (CO2)
- Hydrocarbons
- Nitriles
- Nitrogen oxides (NOx)
- Hydrogen cyanide (hydrocyanic acid)

Possibility of hazardous reactions
No dangerous reaction known under conditions of normal use.

11. Toxicological information

Potential health effects

Routes of exposure Skin, eyes, inhalation, ingestion.

Immediate effects

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>Polymer particles may cause mechanical irritation. The molten product can cause serious burns.</td>
</tr>
<tr>
<td>Eyes</td>
<td>Polymer particles may cause mechanical irritation. Vapors released from thermal decomposition may cause eye irritation with burning and tearing.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Dust irritating to respiratory tract. Overheating in processing may generate hazardous, irritating vapors. Inhalation of vapors is irritating to the respiratory system, may cause throat pain and cough.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Low toxicity by this route is expected based on the biological activity of high molecular weight polymers.</td>
</tr>
</tbody>
</table>
Other

**Acute Inhalation:** The following effects reflect the potential health hazards associated with overexposure to DIPPI and MDI. Diisocyanate vapors or mist at concentrations above the TLV or PEL can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with a preexisting, non-specific bronchial hyperreactivity can respond to concentrations below the TLV or PEL with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure above the TLV or PEL may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in the lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g., fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure and are usually reversible.

**Chronic Inhalation:** As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to diisocyanates at levels well below the TLV or PEL. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can be permanent. Chronic overexposure to diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

**Medical conditions which may be aggravated by exposure:** No specific information available on the product. Off-gases, which may be released if overheated, may affect those with chronic diseases of the respiratory system.

Isocyanates may cause acute irritation and/or sensitization of the respiratory system leading to tightness of the chest, wheeziness and an asthmatic condition. Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates. Persons already sensitized to diisocyanates may develop allergic reactions when using this product.

Toxicological data are not available. Observe the usual hygienic measures for handling chemicals.
12. Ecological Information

Ecotoxicity: The effects of resin pellets on the wildlife that may ingest them is not well understood. In the case of seabirds, some marine biologists believe that the fowl may not be able to pass plastic pellets through their digestive tracts. Thus, large quantities of ingested pellets may cause intestinal blockage, false feelings of satiation or reduction in absorption of nutrients, causing malnutrition and starvation. The goal of SPI's Operation Clean Sweep is zero loss of pellets into the environment.

Environmental Fate/Information: This material is considered to be non-biodegradable. Do not discharge product unmonitored into the environment.

13. Disposal considerations

Disposal considerations
Recycling is encouraged. Incinerate in chemical incinerator in accordance with all federal, state and local regulations.

14. Transport information

US Department of Transportation Not regulated

TDG Not regulated

Ground Transportation (Brazil) Not dangerous (ANTT Resolution 5232/2016)

ICAO/IATA Not restricted

IMDG Not regulated

15. Regulatory Information

16. Other information

NFPA:  Health:  1  Flammability:  0  Instability:  0
HMIS:  Health:  1  Flammability:  0  Physical Hazard:  0

Sources of key data used to compile the datasheet
Information contained in this safety data sheet is based on Celanese owned data and public sources deemed valid or acceptable.

Other Information:
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Abbreviation and Acronym:
ADR = Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS = Chemical Abstracts Service (division of the American Chemical Society)
CLP = Classification, Labelling and Packaging
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IMO)
ICAO = International Civil Aviation Organization
IMDG = International Maritime Code for Dangerous Goods
NBR = Brazilian Standard
NR = Regulatory Standard
ANTT = National Land Transportation Agency