1. Product and Company Identification

Product Name: LUSTRAN ABS 552  000000  
Material Number: 3538846  
Chemical Family: Thermoplastic Polymer  
Chemical Name: Acrylonitrile/Butadiene/Styrene Terpolymer  
Synonyms: ABS, LTD, Q215  
Formula: Not applicable--polymeric material

2. Hazards Identification

**Emergency Overview**

**CAUTION!**  **Color:** Natural  **Form:** solid Pellets  **Odor:** Slight, Sweet, Aromatic.
Melted product is flammable and produces intense heat and dense smoke during burning. Irritating gases/fumes may be given off during burning or thermal decomposition. May cause mechanical irritation (abrasion). Causes a slipping hazard if spilled. Contact with hot material will cause thermal burns.

Potential Health Effects

**Primary Routes of Entry:** Inhalation, Skin Contact, Eye Contact

**Medical Conditions Aggravated by Exposure:** Respiratory disorders, Eye disorders, Skin disorders

**HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE**

**Inhalation**

**Acute Inhalation**

**For Component:** Styrene
May be harmful by inhalation. May cause nervous system effects which can include symptoms of dizziness, incoordination, headache, numbness, and/or confusion. Causes respiratory tract irritation with symptoms of coughing, sore throat and runny nose.
Skin
Acute Skin
For Product: LUSTRAN ABS 552 000000
Contact with heated material can cause thermal burns.

For Component: Styrene
Essentially non-toxic by skin absorption. Causes irritation with symptoms of reddening, itching, and swelling.

Chronic Skin
For Component: Styrene
May cause defatting of the skin with symptoms of dryness and cracking.

Eye
Acute Eye
For Product: LUSTRAN ABS 552 000000
May cause mechanical irritation.

For Component: Styrene
Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause corneal injury.

Ingestion
Acute Ingestion
For Component: Styrene
May be harmful if swallowed. Acute overexposure to this product may cause headache, dizziness, flushing, hypotension, and tachycardia. Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea. Ingestion and/or vomiting may cause aspiration into the lungs resulting in chemical pneumonitis (inflammation of the lungs).

Chronic Ingestion
For Component: Styrene
May cause brain damage. May cause kidney damage. May cause liver damage. May cause lung damage.

General Effects of Exposure
Acute Effects of Exposure
For Product: LUSTRAN ABS 552 000000
Gases and fumes evolved during the thermal processing or decomposition of this material may irritate the eyes, skin or respiratory tract.

Chronic Effects of Exposure
For Product: LUSTRAN ABS 552 000000
Not expected to cause any adverse chronic health effects.

Carcinogenicity:
Styrene IARC - Overall evaluation: 2B Possible carcinogen.

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th>Weight %</th>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=0.25%</td>
<td>Styrene</td>
<td>100-42-5</td>
<td></td>
</tr>
</tbody>
</table>
4. First Aid Measures

Eye Contact
In case of contact, flush eyes with plenty of lukewarm water.

Skin Contact
In case of skin contact, wash affected areas with soap and water. Get medical attention if thermal burn occurs.

Inhalation
If inhaled, remove to fresh air.

Ingestion
Get medical attention.

5. Fire-Fighting Measures

Suitable Extinguishing Media: water, foam, dry chemical, carbon dioxide (CO2)

Special Fire Fighting Procedures
Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.

Unusual Fire/Explosion Hazards
Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Dust may form explosive mixtures with air.

6. Accidental release measures

Spill and Leak Procedures
If molten, allow material to cool and place into an appropriate marked container for disposal.

7. Handling and Storage

Storage Temperature: maximum: 82 °C (179.6 °F)

Storage Period
Not Established

Handling/Storage Precautions
Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Avoid breathing dust.

Further Info on Storage Conditions
Protect equipment (e.g. storage bins, conveyors, dust collectors) with explosion vents.
8. Exposure Controls / Personal Protection

**Styrene (100-42-5)**

US. ACGIH Threshold Limit Values
- Time Weighted Average (TWA): 20 ppm
- Short Term Exposure Limit (STEL): 40 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)
- Time Weighted Average (TWA): 100 ppm
- Ceiling Limit Value: 200 ppm
- Maximum concentration: 600 ppm (5 minutes in any 3 hours)

US. ACGIH Threshold Limit Values
- Hazard Designation: Group A4 Not classifiable as a human carcinogen.

**Industrial Hygiene/Ventilation Measures**

General dilution and local exhaust as necessary to control airborne vapors, mists, dusts and thermal decomposition products below appropriate airborne concentration standards/guidelines.

**Respiratory Protection**

Although no exposure limit has been established for this product, the OSHA PEL for Particulates Not Otherwise Regulated (PNOR) of 15 mg/m³ - total dust, 5 mg/m³ - respirable fraction is recommended. In addition, the ACGIH recommends 3 mg/m³ - respirable particles and 10 mg/m³ - inhalable particles for Particles (insoluble or poorly soluble) Not Otherwise Specified (PNOS).

**Hand Protection**

Wear heat resistant gloves when handling molten material.

**Eye Protection**

Safety glasses with side-shields.

**Skin and body protection**

No special skin protection requirements during normal handling and use.

**Additional Protective Measures**

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Purgings should be collected as small flat thin shapes or thin strands to allow for rapid cooling. Fumes or vapors emitted from the hot melted plastic during converting operations may condense on cool overhead metalsurfaces or exhaust ducts. The condensate, usually in the form of a soft, grease-like semi-solid may contain substances which can be irritating or toxic. Wear rubber gloves when cleaning contaminated surfaces.

9. Physical and chemical properties

**Form:** solid
**Appearance:** Pellets
**Color:** Natural
**Odor:** Slight, Sweet, Aromatic
**pH:** Not Applicable
**Boiling Point/Range:** Not Applicable
**Flash Point:** 388 - 400 °C (730.4 - 752 °F)
**Lower Explosion Limit:** Not Established
**Upper Explosion Limit:** Not Established
Vapor Pressure: Not Applicable
Density: not applicable
Specific Gravity: Approximately 1.05
Solubility in Water: Insoluble
Autoignition Temperature: 495 - 510 °C (923 - 950 °F)
Decomposition Temperature: approximately 260 °C (500 °F)
Softening Point: 82 - 107 °C (179.6 - 224.6 °F)
Bulk Density: 600 - 700 kg/m³

10. Stability and Reactivity

Hazardous Reactions
Hazardous polymerization does not occur.

Stability
Stable

Materials to avoid
None known.

Conditions to avoid
None known.

Hazardous decomposition products
By Fire and Thermal Decomposition: Carbon Dioxide; Water; Styrene; Acrylonitrile; hydrogen cyanide; Carbon monoxide, hydrocarbons

11. Toxicological Information

Toxicity Data for LUSTRAN ABS 552 000000
Toxicity Note
Toxicity data is based on similar ABS resins.

Skin Irritation
rabbit, Non-irritating

Eye Irritation
rabbit, Draize, Slightly irritating

Other Relevant Toxicity Information
Styrene is slightly toxic to practically nontoxic in oral feeding studies (rats) and skin applications studies (rabbits). Repeated inhalation studies in rats for 3 weeks reported effects suggestive of a hearing impairment. Repeated inhalation exposures produced lung irritation in guinea pigs and organ weight changes in rats. An oral study in mice reported slight increases in lung tumors and lymphomas, but the National Cancer Institute reported no convincing evidence for carcinogenicity in repeated oral studies with rats and mice. In standard mutagenicity tests, both positive and negative genetic changes were reported. No birth defects occurred in rats given styrene orally; some toxic effects on the fetus were noted in a limited inhalation study using repeated, extremely high doses.

Toxicity Data for Acrylonitrile/Butadiene/Styrene Terpolymer
Acute Oral Toxicity
LD50: > 5,000 mg/kg (Rat)

Acute dermal toxicity

LD50: > 2,000 mg/kg (rabbit)
Estimated Value

**Skin Irritation**
rabbit, Draize, Non-irritating

**Eye Irritation**
rabbit, Slightly irritating

**Sensitization**
dermal: non-sensitizer (Guinea pig, Buehler Test)

**Toxicity Data for Styrene**

**Acute Oral Toxicity**
LD50: 1,000 mg/kg (Rat)

**Acute Inhalation Toxicity**
LC50: 11.8 mg/l, 4 hrs (Rat)

**Acute dermal toxicity**
LD50: > 20,000 mg/kg (rabbit)

**Skin Irritation**
rabbit, Draize Test, Moderately irritating

**Eye Irritation**
rabbit, Draize, Severely irritating

**Sensitization**
dermal: non-sensitizer (guinea pig, Maximisation Test (GPMT))

**Repeated Dose Toxicity**
6 months, inhalation: NOAEL: 6.3 mg/kg, (Monkey, Male/Female, daily)
28 Days, dermal: NOAEL: < 500 mg/kg, (Rat, male, daily)
13 weeks, inhalation: NOAEL: 0.565 mg/l, (Rat, Male/Female, daily)

**Mutagenicity**
Genetic Toxicity in Vitro:
Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)
Sister Chromatid Exchange: positive (human lymphocytes, Metabolic Activation: with/without)
Genetic Toxicity in Vivo:
Cytogenetic assay: positive (Rat, )
Drosophila SLRL test: positive (Drosophila melanogaster, )

**Carcinogenicity**
Styrene was tested for carcinogenicity in rats in four gavage studies, one drinking-water study and two inhalation studies. Overall, there was no reliable evidence for an increase in tumour incidence in rats. Styrene was tested for carcinogenicity in mice in one inhalation study and four oral gavage studies. In the inhalation study, there was an increase in the incidence of pulmonary adenomas and only an increase in that of carcinomas in the high-dose group. Two of the gavage studies were negative and the other two were considered inadequate for an evaluation of the carcinogenicity of styrene. A screening study by intraperitoneal administration also did not find an increase in tumour incidence or multiplicity in mice. The increased risks for lymphatic and haematopoietic neoplasms observed in some epidemiological studies are generally small, statistically unstable and are not very robust.

**Toxicity to Reproduction/Fertility**
Three generation study, oral, daily, (Rat, Male/Female) NOAEL (parental): 250 ppm, NOAEL (F1): 125
ppm, NOAEL (F2): 125 ppm
No effects on Reproductive parameters observed at doses tested.
Other method, inhalation, daily, (rabbit, female) NOAEL (parental): 2.6 mg/l, NOAEL (F1): 2.6 mg/l,

**Developmental Toxicity/Teratogenicity**
Rat, female, inhalation, gestation, NOAEL (teratogenicity): > 600 ppm, NOAEL (maternal): < 300 ppm
No Teratogenic effects observed at doses tested.
rabbit, female, inhalation, gestation, NOAEL (teratogenicity): > 600 ppm, NOAEL (maternal): > 600 ppm
Fetotoxicity seen only with maternal toxicity.

### Ecological Information

**Ecological Data for Acrylonitrile/Butadiene/Styrene Terpolymer**

**Biodegradation**
Not readily biodegradable.

**Bioaccumulation**
Does not bioaccumulate.

**Acute and Prolonged Toxicity to Fish**
LC50: 18 mg/l (Common Carp (Cyprinus carpio), 96 hrs)

**Ecological Data for Styrene**

**Biodegradation**
aerobic, 71 %, Exposure time: 28 d

**Biological Oxygen Demand (BOD)**
5 Days, 2.46 mg/l

**Chemical Oxygen Demand (COD)**
2,800 - 2,880 mg/g

**Theoretical Biological Oxygen Demand (ThBOD)**
3.07 mg/l

**Bioaccumulation**
Carp, 13.5 BCF

**Acute and Prolonged Toxicity to Fish**
LC50: 9 mg/l (Sheepshead minnow (Cyprinodon variegatus), 96 hrs)
LC50: 29 - 59.3 mg/l (Fathead minnow (Pimephales promelas), 96 hrs)
LC50: 25 mg/l (Bluegill (Lepomis macrochirus), 96 hrs)
LC50: 2.4 - 4.1 mg/l (Rainbow trout (Salmo gairdneri), 96 hrs)

**Acute Toxicity to Aquatic Invertebrates**
EC50: 4.7 - 23 mg/l (Water flea (Daphnia magna), 48 hrs)

**Toxicity to Aquatic Plants**
EC50: 1.4 mg/l, (Green algae (Selenastrum capricornutum), 72 hrs)

**Toxicity to Microorganisms**
EC50: approximately 500 mg/l, (Activated sludge microorganisms, 30 min)
EC50: 5.5 mg/l, (Photobacterium phosphoreum, 5 min)
EC50: 72 mg/l, (Pseudomonas putida, 16 hrs)

13. Disposal considerations

Waste Disposal Method
Waste disposal should be in accordance with existing federal, state and local environmental control laws.

14. Transportation information

Land transport (DOT)
Non-Regulated

Sea transport (IMDG)
Non-Regulated

Air transport (ICAO/IATA)
Non-Regulated

15. Regulatory Information

United States Federal Regulations

OSHA Hazcom Standard Rating: Hazardous

US. Toxic Substances Control Act: Listed on the TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302):
Components
None

SARA Section 311/312 Hazard Categories:
Acute Health Hazard, Chronic Health Hazard

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):
Components
None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:
Components
Styrene

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time
of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

**State Right-To-Know Information**
The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

The concentrations reported below in units of parts per million (ppm) or parts per billion (ppb) are maximum values.

**Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:**

<table>
<thead>
<tr>
<th>Weight %</th>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;=1%</td>
<td>Acrylonitrile/Butadiene/Styrene/ Terpolymer</td>
<td>9003-56-9</td>
</tr>
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</table>

**New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>&lt;=0.25%</td>
<td>Styrene</td>
<td>100-42-5</td>
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**Pennsylvania Right to Know Special Hazard Substance List:**

<table>
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<tr>
<th>Weight %</th>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=0.01%</td>
<td>Acrylonitrile</td>
<td>107-13-1</td>
</tr>
</tbody>
</table>

**MA Right to Know Extraordinarily Hazardous Substance List:**

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<td>Styrene</td>
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</tr>
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<td>&lt;=0.01%</td>
<td>Acrylonitrile</td>
<td>107-13-1</td>
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</table>

**California Prop. 65:**

Warning! This product contains chemical(s) known to the State of California to be Carcinogenic.

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<td>Acrylonitrile</td>
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16. Other Information

**HMIS Rating**

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>0</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
</tr>
<tr>
<td>Physical Hazard</td>
<td>0</td>
</tr>
</tbody>
</table>

0=Minimal  1=Slight  2=Moderate  3=Serious  4=Severe
* = Chronic Health Hazard

LANXESS Corporation's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by LANXESS Corporation as a customer service.

Contact Person: Product Safety Department
Telephone: (800) LANXESS
MSDS Number: R302571
Version Date: 04/04/2005
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