SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form: Substance
Physical state: Liquid
Substance name: 10-UNDECENYLAMINE
Product code: ENEU4340
Formula: C11H23N
Synonyms: 1-AMINO-10-UNDECENE
          11-AMINO-1-UNDECENE
Chemical family: AMINE

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

1.2.1. Relevant identified uses

Use of the substance/mixture: Chemical intermediate

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

GELEST INC.
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
info@gelestde.com - www.gelestde.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 1B: H314
Serious eye damage/eye irritation, Category 1: H318
Skin sensitisation, Category 1: H317
Hazardous to the aquatic environment — Chronic Hazard, Category 3: H412

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP):

Signal word (CLP): Danger
10-UNDECENYLAMINE
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Hazard statements (CLP) : H314 - Causes severe skin burns and eye damage.
                         H317 - May cause an allergic skin reaction.
                         H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements (CLP) : P280 - Wear protective gloves/protective clothing/eye protection/face protection.
                               P260 - Do not breathe vapours.
                               P264 - Wash hands thoroughly after handling.
                               P273 - Avoid release to the environment.
                               P301 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards
Other hazards not contributing to the classification : Additional dimethylamine may be formed by reaction with moisture and water. The US OSHA PEL (TWA) for dimethylamine is 10 ppm.

SECTION 3: Composition/information on ingredients

3.1. Substances
Name: 10-UNDECENYLAMINE
CAS-No.: 62595-52-2

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
</table>
| 10-Undecenylamine     | (CAS-No.) 62595-52-2| 95 - 100 | Skin Corr. 1B, H314  
                         |                                  |                         | Eye Dam. 1, H318  
                         |                                  |                         | Skin Sens. 1B, H317  
                         |                                  |                         | Aquatic Chronic 3, H412 |

Full text of H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.
First-aid measures after skin contact : Wash with plenty of water/…. Get immediate medical advice/attention.
First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects : Causes severe skin burns and eye damage.
Symptoms/effects after inhalation : May cause irritation to the respiratory tract.
Symptoms/effects after skin contact : Causes (severe) skin burns.
Symptoms/effects after eye contact : Causes serious eye damage.
Symptoms/effects after ingestion : May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media
Unsuitable extinguishing media : Do not use straight streams.

5.2. Special hazards arising from the substance or mixture
Fire hazard : Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters
Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.
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Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapour and mist.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Protective equipment: Wear protective equipment as described in Section 8.
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: “Exposure controls/personal protection”.

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapour and mist. Provide good ventilation in process area to prevent formation of vapour.
Hygiene measures: Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Keep container tightly closed. Store locked up.
Incompatible materials: Strong acids. Strong oxidizing agents.
Storage area: Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls
Appropriate engineering controls:
Provide local exhaust or general room ventilation.

Personal protective equipment:
Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:
Neoprene or nitrile rubber gloves

Eye protection:
Chemical goggles or face shield. Contact lenses should not be worn

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor - amine gas (brown cartridge) respirator.
SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>255.51 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>Colorless to yellow.</td>
</tr>
<tr>
<td>Odour</td>
<td>Amine-like.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.4487</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>65 °C @ 0.5 mm Hg</td>
</tr>
<tr>
<td>Flash point</td>
<td>123 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.809</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
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</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Strong acids. Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon oxides. Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

10-Undecenylamine (62595-52-2)

LD50 oral rat: 2169 mg/kg (male and female: OECD Test Guideline 401)

ATE CLP (oral): 2169 mg/kg bodyweight

Skin corrosion/irritation: Causes severe skin burns and eye damage. Skin-Rabbit, Result: Corrosive -4 h (OECD test Guideline 404)

Serious eye damage/irritation: Causes serious eye damage. Eye-Rabbit, Result: Corrosive
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Respiratory or skin sensitisation: May cause an allergic skin reaction.
Maximisation Test (GPM-T)-Guinea pig, Result: The product is a skin sensitiser, sub-category 1B (OECD test Guideline 406)

Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

Reproductive toxicity: Not classified
STOT-single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified
Potential adverse human health effects and symptoms: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin, cough, shortness of breath, headache, nausea.
Symptoms/effects after inhalation: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact: Causes (severe) skin burns.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: May be harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity
Acute aquatic toxicity: Not classified
Chronic aquatic toxicity: Harmful to aquatic life with long lasting effects.

10-Undecenylamine (62595-52-2)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>175 mg/l Static test: Cyprinus carpio (Carp), (OECD Test Guideline 201)</td>
</tr>
<tr>
<td>ErC50 (algae)</td>
<td>84 mg/l Static test: Desmodesmus subspicatus (Scenedesmus subspicatus), (OECD Test Guideline 201)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
Other adverse effects: This substance may be hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Sewage disposal recommendations: Do not dispose of waste into sewer.
Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR) : 2735
UN-No. (IMDG) : 2735
UN-No. (IATA) : 2735
UN-No. (ADN) : 2735
UN-No. (RID) : 2735

14.2. UN proper shipping name
Proper Shipping Name (ADR) : AMINES, LIQUID, CORROSIVE, N.O.S.
Proper Shipping Name (IMDG) : AMINES, LIQUID, CORROSIVE, N.O.S.
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Proper Shipping Name (IATA) : Amines, liquid, corrosive, n.o.s.
Proper Shipping Name (ADN) : AMINES, LIQUID, CORROSIVE, N.O.S.
Proper Shipping Name (RID) : AMINES, LIQUID, CORROSIVE, N.O.S.
Transport document description (ADR) : UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (10-UNDECENYLAMINE), 8, II, (E)
Transport document description (IMDG) : UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (10-UNDECENYLAMINE), 8, II
Transport document description (ADN) : UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (10-UNDECENYLAMINE), 8, II
Transport document description (RID) : UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (10-UNDECENYLAMINE), 8, II

14.3. Transport hazard class(es)

ADR
Transport hazard class(es) (ADR) : 8
Danger labels (ADR) : 8

IMDG
Transport hazard class(es) (IMDG) : 8
Danger labels (IMDG) : 8

IATA
Transport hazard class(es) (IATA) : 8
Hazard labels (IATA) : 8

ADN
Transport hazard class(es) (ADN) : 8
Danger labels (ADN) : 8

RID
Transport hazard class(es) (RID) : 8
Danger labels (RID) : 8

14.4. Packing group
Packing group (ADR) : II

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<table>
<thead>
<tr>
<th>Packing group (IMDG)</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group (IATA)</td>
<td>II</td>
</tr>
<tr>
<td>Packing group (ADN)</td>
<td>II</td>
</tr>
<tr>
<td>Packing group (RID)</td>
<td>II</td>
</tr>
</tbody>
</table>

#### 14.5. Environmental hazards

- **Dangerous for the environment**: No
- **Marine pollutant**: No
- **Other information**: No supplementary information available

#### 14.6. Special precautions for user

- **Overland transport**
  - **Classification code (ADR)**: C7
  - **Special provisions (ADR)**: 274
  - **Limited quantities (ADR)**: 1L
  - **Excepted quantities (ADR)**: E2
  - **Packing instructions (ADR)**: P001, IBC02
  - **Mixed packing provisions (ADR)**: MP15
  - **Portable tank and bulk container instructions (ADR)**: T11
  - **Tank code (ADR)**: L4BN
  - **Vehicle for tank carriage**: AT
  - **Transport category (ADR)**: 2
  - **Hazard identification number (Kemler No.)**: 80
  - **Orange plates**: 2735
  - **Tunnel restriction code (ADR)**: E
  - **EAC code**: 2X
  - **APP code**: B

- **Transport by sea**
  - **Special provisions (IMDG)**: 274
  - **Packing instructions (IMDG)**: P001
  - **IBC packing instructions (IMDG)**: IBC02
  - **Tank instructions (IMDG)**: T11
  - **Tank special provisions (IMDG)**: TP1, TP27
  - **EmS-No. (Fire)**: F-A
  - **EmS-No. (Spillage)**: S-B
  - **Stowage category (IMDG)**: A
  - **Segregation (IMDG)**: SG35
  - **Properties and observations (IMDG)**: Colourless to yellowish liquids or solutions with a pungent odour. Miscible with or soluble in water. When involved in a fire, evolve toxic gases. Corrosive to most metals, especially to copper and its alloys. Reacts violently with acids. Cause burns to skin, eyes and mucous membranes.

- **Air transport**
  - **PCA Excepted quantities (IATA)**: E2
  - **PCA Limited quantities (IATA)**: Y840
  - **PCA limited quantity max net quantity (IATA)**: 0.5L
  - **PCA packing instructions (IATA)**: 851
  - **PCA max net quantity (IATA)**: 1L
  - **CAO packing instructions (IATA)**: 855
  - **CAO max net quantity (IATA)**: 30L
  - **Special provisions (IATA)**: A3, A803
  - **ERG code (IATA)**: 8L

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- Inland waterway transport
  Classification code (ADN) : C7
  Special provisions (ADN) : 274
  Limited quantities (ADN) : 1 L
  Excepted quantities (ADN) : E2
  Carriage permitted (ADN) : T
  Equipment required (ADN) : PP, EP
  Number of blue cones/lights (ADN) : 0

- Rail transport
  Classification code (RID) : C7
  Special provisions (RID) : 274
  Limited quantities (RID) : 1L
  Excepted quantities (RID) : E2
  Packing instructions (RID) : P001, IBC02
  Mixed packing provisions (RID) : MP15
  Portable tank and bulk container instructions (RID) : T11
  Portable tank and bulk container special provisions (RID) : TP1, TP27
  Tank codes for RID tanks (RID) : L4BN
  Transport category (RID) : 2
  Colis express (express parcels) (RID) : CE6
  Hazard identification number (RID) : 80

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
10-UNDECENYLAMINE is not on the REACH Candidate List
10-UNDECENYLAMINE is not on the REACH Annex XIV List
10-UNDECENYLAMINE is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

15.1.2. National regulations

Germany

Netherlands
SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
NIET-lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark
Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment
No additional information available
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SECTION 16: Other information

Abbreviations and acronyms:

<table>
<thead>
<tr>
<th>Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor</th>
</tr>
</thead>
</table>

Other information: Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

- **Aquatic Chronic 3**: Hazardous to the aquatic environment — Chronic Hazard, Category 3
- **Eye Dam. 1**: Serious eye damage/eye irritation, Category 1
- **Skin Corr. 1B**: Skin corrosion/irritation, Category 1B
- **Skin Sens. 1**: Skin sensitisation, Category 1
- **Skin Sens. 1B**: Skin sensitisation, category 1B
- **H314**: Causes severe skin burns and eye damage.
- **H317**: May cause an allergic skin reaction.
- **H318**: Causes serious eye damage.
- **H412**: Harmful to aquatic life with long lasting effects.

SDS EU (REACH Annex II) - Custom

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