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

1.1 Product identifier
   Trade name : ALUDUR LA 15 n.l.
   Product code : 059901DA001

1.2 Relevant identified uses of the substance or mixture and uses advised against
   This information is not available.

1.3 Details of the supplier of the safety data sheet
   Company : ECKART GmbH
   Guentersthal 4
   91235 Hartenstein
   Telephone : +499152770
   Telefax : +499152777008
   E-mail address of person responsible for the SDS : msds.eckart@altana.com

1.4 Emergency telephone number
   GBK Gefahrgut Büro GmbH, Ingelheim, Germany:
   From outside US: (001) 352-323-3500
   (First call in English, response in your language is possible)
   US & Canada (toll free) : 1-800-5355-053

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification (REGULATION (EC) No 1272/2008)
   Not a dangerous substance according to GHS.

2.2 Label elements
   Labelling (REGULATION (EC) No 1272/2008)
   Not a dangerous substance or mixture according to the Globally Harmonised System (GHS).

   Additional Labelling
   EUH210 Safety data sheet available on request.

2.3 Other hazards
   This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Registration number</th>
<th>Classification REGULATION (EC) No 1272/2008</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium powder (stabilised)</td>
<td>7429-90-5 231-072-3 013-002-00-1 01-2119529243-45</td>
<td></td>
<td></td>
<td></td>
<td>Flam. Sol. 1; H228</td>
<td>&gt;= 50 - &lt;= 100</td>
</tr>
<tr>
<td>Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene</td>
<td>68411-46-1 270-128-1 01-2119491299-23</td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 3; H412</td>
<td>&gt;= 2.5 - &lt; 10</td>
</tr>
<tr>
<td>octylphosphonic acid</td>
<td>4724-48-5 225-218-5 01-2119970569-20</td>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT RE 2; H373</td>
<td>&gt;= 1 - &lt; 3</td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Move the victim to fresh air.

No hazards which require special first aid measures.

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : Wash off immediately with soap and plenty of water.

In case of eye contact : Remove contact lenses.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed
None known.

4.3 Indication of any immediate medical attention and special treatment needed
This information is not available.
SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:
- Dry sand
- Special powder against metal fire

Unsuitable extinguishing media:
- ABC powder
- Carbon dioxide (CO2)
- Water
- Foam

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting:
Contact with water liberates extremely flammable gas (hydrogen).

5.3 Advice for firefighters

Special protective equipment for firefighters:
Wear self-contained breathing apparatus for firefighting if necessary.

Further information:
Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions:
Use personal protective equipment. Evacuate personnel to safe areas. Avoid dust formation.

6.2 Environmental precautions

6.3 Methods and material for containment and cleaning up

Methods for cleaning up:
Use mechanical handling equipment. Do not use a vacuum cleaner.
Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling:
- Avoid dust formation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.
- Store away from heat.

For personal protection see section 8.
- Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion:
- Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures:
- General industrial hygiene practice.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:
- Electrical installations / working materials must comply with the technological safety standards.

Further information on storage conditions:
- Protect from humidity and water.

Advice on common storage:
- Do not store together with oxidizing and self-igniting products.
  - Never allow product to get in contact with water during storage.
  - Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Further information on storage stability:
- No decomposition if stored and applied as directed.

7.3 Specific end use(s)

This information is not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium powder (stabilised)</td>
<td>7429-90-5</td>
<td>GV (Dust)</td>
<td>0,5 mg/m3</td>
<td>DK OEL</td>
</tr>
</tbody>
</table>

Further information:
- List of limit values for dust. Limit values for dust have been established for concentrations of total dust and for concentrations of respirable dust. Except for wood dust, Arbejdstilsynet has not established a limit value for inhalable dust (DS/EN 481 on inhalable dust).
- GV (Respirable dust) 5 mg/m3 DK OEL
Further information

List of limit values for dust. Limit values for dust have been established for concentrations of total dust and for concentrations of respirable dust. Except for wood dust, Arbejdstilsynet has not established a limit value for inhalable dust (DS/EN 481 on inhalable dust).

<table>
<thead>
<tr>
<th>GV (Dust)</th>
<th>10 mg/m³</th>
<th>DK OEL</th>
</tr>
</thead>
</table>

Further information

List of limit values for dust. Limit values for dust have been established for concentrations of total dust and for concentrations of respirable dust. Except for wood dust, Arbejdstilsynet has not established a limit value for inhalable dust (DS/EN 481 on inhalable dust).

<table>
<thead>
<tr>
<th>GV (Total dust)</th>
<th>3 mg/m³</th>
<th>DK OEL</th>
</tr>
</thead>
</table>

Further information

List of limit values for dust. Limit values for dust have been established for concentrations of total dust and for concentrations of respirable dust. Except for wood dust, Arbejdstilsynet has not established a limit value for inhalable dust (DS/EN 481 on inhalable dust).

<table>
<thead>
<tr>
<th>GV (Fumes)</th>
<th>5 mg/m³ (Aluminium)</th>
<th>DK OEL</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>GV (total powder and dust)</th>
<th>5 mg/m³ (Aluminium)</th>
<th>DK OEL</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>GV (respirable powder and dust)</th>
<th>2 mg/m³ (Aluminium)</th>
<th>DK OEL</th>
</tr>
</thead>
</table>

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium powder (stabilised)</td>
<td>Workers</td>
<td>Inhalation</td>
<td>long term – local effects</td>
<td>3,72 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Oral</td>
<td>long term – systemic effects</td>
<td>3,95 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>3,72 mg/m³</td>
</tr>
<tr>
<td>Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene</td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>0,62 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>4,37 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>0,31 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>1,09 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>0,31 mg/kg</td>
</tr>
<tr>
<td>octylphosphonic acid</td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>4 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>0,14 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>0,02 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>0,071 mg/m³</td>
</tr>
</tbody>
</table>
Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium powder (stabilised)</td>
<td>Fresh water</td>
<td>0.0749 mg/l</td>
</tr>
<tr>
<td></td>
<td>clarification plant</td>
<td>20 mg/l</td>
</tr>
<tr>
<td>Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene</td>
<td>Fresh water</td>
<td>0.051 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.0051 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>9320 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>932 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>1860 mg/kg</td>
</tr>
<tr>
<td></td>
<td>clarification plant</td>
<td>1 mg/l</td>
</tr>
<tr>
<td>octylphosphonic acid</td>
<td>Fresh water</td>
<td>0.04 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>0.49 mg/kg</td>
</tr>
<tr>
<td></td>
<td>STP</td>
<td>100 mg/l</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.075 mg/kg</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

**Personal protective equipment**

Eye protection : Safety glasses

Hand protection

Material : Protective gloves

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. The exact breakthrough time can be obtained from the protective glove producer and this has to be observed.

Skin and body protection : Long sleeved clothing

Respiratory protection : Use suitable breathing protection if workplace concentration requires.

Breathing apparatus with filter.

P1 filter

No personal respiratory protective equipment normally required.

**Environmental exposure controls**

Water : The product should not be allowed to enter drains, water courses or the soil.
Appearsance: pellets

Colour: silver

Odour: odourless

Odour Threshold: No data available

pH: No data available

Freezing point: No data available

Boiling point/boiling range: No data available

Flash point: Not applicable

Evaporation rate: No data available

Flammability (solid, gas): The product is not flammable.

Self-ignition: not auto-flammable

Auto-ignition temperature: > 600 °C

Smoldering temperature: No data available

Decomposition temperature: No data available

Explosive properties: No data available

Oxidizing properties: No data available

Upper explosion limit / Upper flammability limit: No data available

Lower explosion limit / Lower flammability limit: No data available

Vapour pressure: No data available

Relative vapour density: No data available

Relative density: No data available

Density: 2.7 g/cm³

Bulk density: No data available

Solubility(ies)

Water solubility: insoluble

Solubility in other solvents: No data available
Partition coefficient: n-octanol/water : No data available
Decomposition temperature : No data available
Viscosity, dynamic : No data available
Viscosity, kinematic : No data available
Flow time : No data available

9.2 Other information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No decomposition if stored and applied as directed.

10.2 Chemical stability
No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions
Hazardous reactions : Contact with acids and alkalis may release hydrogen.
Stable under recommended storage conditions.
Dust may form explosive mixture in air.

10.4 Conditions to avoid
Conditions to avoid : No data available

10.5 Incompatible materials
Materials to avoid : Acids
Bases
Oxidizing agents
Water

10.6 Hazardous decomposition products
Contact with water or humid air : This information is not available.
Thermal decomposition : This information is not available.
SECTION 11: Toxicological information

11.1 Information on toxicological effects

**Acute toxicity**
Not classified based on available information.

**Product:**
Acute oral toxicity: Acute toxicity estimate: > 2.000 mg/kg
Method: Calculation method

**Components:**
- aluminium powder (stabilised):
  Acute inhalation toxicity: LC50 (Rat): > 5 mg/l
  Exposure time: 4 h
  Test atmosphere: dust/mist

- octylphosphonic acid:
  Acute oral toxicity: (Rat): 500 - 2.000 mg/kg

**Skin corrosion/irritation**
Not classified based on available information.

**Product:**
Result: No skin irritation
Remarks: Based on available data, the classification criteria are not met.

**Components:**
- octylphosphonic acid:
  Remarks: Extremely corrosive and destructive to tissue.

**Serious eye damage/eye irritation**
Not classified based on available information.

**Product:**
Result: No eye irritation
Remarks: Based on available data, the classification criteria are not met.

**Components:**
- octylphosphonic acid:
  Remarks: May cause irreversible eye damage.

**Respiratory or skin sensitisation**

**Skin sensitisation**
Not classified based on available information.
Respiratory sensitisation
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Further information

Product:
Remarks: No data available

Components:
octylphosphonic acid:
Remarks: No data available

SECTION 12: Ecological information

12.1 Toxicity
No data available

12.2 Persistence and degradability
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

Product:
Assessment : This substance/mixture contains no components considered
to be either persistent, bioaccumulative and toxic (PBT), or
very persistent and very bioaccumulative (vPvB) at levels of
0.1% or higher..
12.6 Other adverse effects

**Product:**
Additional ecological information : No data available

**Components:**
octylphosphonic acid:
Additional ecological information : No data available

SECTION 13: Disposal considerations

**European Waste Catalogue**
- 12 01 04 - non-ferrous metal dust and particles
- 100321 - other particulates and dust (including ball-mill dust) containing dangerous substances

**13.1 Waste treatment methods**
- **Product**: In accordance with local and national regulations.
- **Contaminated packaging**: Empty containers should be taken to an approved waste handling site for recycling or disposal. In accordance with local and national regulations.

SECTION 14: Transport information

**14.1 UN number**

**14.2 UN proper shipping name**

**14.3 Transport hazard class(es)**

**14.4 Packing group**

**14.5 Environmental hazards**

**14.6 Special precautions for user**
- **Remarks**: Not classified as dangerous in the meaning of transport regulations.

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**
- Not applicable for product as supplied.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

ALUDUR LA 15 n.l.

Version 1.0
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Date of first issue: 21.11.2018

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).

15.2 Chemical safety assessment

SECTION 16: Other information

Full text of H-Statements
H228 : Flammable solid.
H302 : Harmful if swallowed.
H314 : Causes severe skin burns and eye damage.
H318 : Causes serious eye damage.
H373 : May cause damage to organs through prolonged or repeated exposure if swallowed.
H412 : Harmful to aquatic life with long lasting effects.

Full text of other abbreviations
Acute Tox. : Acute toxicity
Aquatic Chronic : Long-term (chronic) aquatic hazard
Eye Dam. : Serious eye damage
Flam. Sol. : Flammable solids
Skin Corr. : Skin corrosion
STOT RE : Specific target organ toxicity - repeated exposure
DK OEL : Denmark. Occupational Exposure Limits
DK OEL / GV : Long term exposure limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect
Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information
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.

DK / EN