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

1.1 Product identifier
   Trade name : LUXAN D393
   Product code : 038032ML0

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
             Quentersthal 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
   None known.
SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Remarks: No dangerous ingredients according to Regulation (EC) No. 1907/2006

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: 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 with soap and 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

5.2 Special hazards arising from the substance or mixture

5.3 Advice for firefighters

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

Further information: 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: Avoid dust formation.

6.2 Environmental precautions

6.3 Methods and material for containment and cleaning up

Methods for cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. 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: For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion: Normal measures for preventive fire protection.

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.

Advice on common storage: No materials to be especially mentioned.

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 (Version Date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>iron hydroxide oxide yellow</td>
<td>51274-00-1</td>
<td>TWA (Respirable fraction)</td>
<td>1,5 mg/m³ (Iron)</td>
<td>SK OEL (2011-11-23)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Inhalable)</td>
<td>4 mg/m³</td>
<td>SK OEL (2011-11-23)</td>
</tr>
<tr>
<td>Substance</td>
<td>TWA (Total fraction)</td>
<td>(Iron)</td>
<td>SK OEL</td>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------</td>
<td>-----------------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>TWA (Solid aerosols, total fraction)</td>
<td>10 mg/m³</td>
<td>11-23</td>
<td>SK OEL (2007-06-20)</td>
<td></td>
</tr>
<tr>
<td>TWA (Fume, respirable fraction)</td>
<td>1.5 mg/m³</td>
<td>(Iron)</td>
<td>SK OEL (2011-11-23)</td>
<td></td>
</tr>
<tr>
<td>TWA (Fume, inhalable fraction)</td>
<td>4 mg/m³</td>
<td>(Iron)</td>
<td>SK OEL (2011-11-23)</td>
<td></td>
</tr>
<tr>
<td>Silicon dioxide (7631-86-9)</td>
<td>TWA (Total fraction)</td>
<td>10 mg/m³</td>
<td>SK OEL (2011-11-23)</td>
<td></td>
</tr>
</tbody>
</table>

**Further information**

The OEL for solid aerosols is determined as value of an average workday of the exposure to the total concentration of the solid aerosol (NPELc) or to the respiration fraction (NPELr). A workplace can be considered acceptable, if the appropriate solid aerosol complies with both OEL-values. In case components occur in a mixture, the OEL for the individual components of the mixture apply. Solid aerosols with a mainly fibrogenic influence, A insoluble solid aerosol will be considered as fibrogenic, if the substance contains more than 1% of a fibrogenic component and during animal test an obvious fibrogenic reaction of the lungs was shown. As fibrogenic are considered insoluble solid aerosols, including aerosol droplets containing more than 1% and during animal tests an obvious fibrogenic reaction of the lungs was shown. For the aerosol containing fibrogenic components always use the respirable fraction and concentration of fibrogenic components. If the aerosol contains less than 1% SiO₂ and does not contain asbestos, it is considered an aerosol not otherwise specified.

<table>
<thead>
<tr>
<th>Substance</th>
<th>TWA (Respirable fraction)</th>
<th>2 mg/m³</th>
<th>SK OEL (2011-11-23)</th>
</tr>
</thead>
</table>

**Further information**

The respirable fraction is the part of the components of the solid aerosols <= 5 µm, which is taken from the air sample out of the respiration area of the employer with a specified method and which components can get through in the alveoli. Measurement of the respirable fraction is according to the Johannesburg convention (STN EN 481). Measurement strategy, choosing the appropriate processing procedure and treatment should be taken from STN EN 482 and STN EN 689. Solid aerosols with a mainly fibrogenic influence, A insoluble solid aerosol will be considered as fibrogenic, if the substance contains more than 1% of a fibrogenic component and during animal test an obvious fibrogenic reaction of the lungs was shown. As fibrogenic are considered insoluble solid aerosols, including aerosol droplets containing more than 1% and during animal tests an obvious fibrogenic reaction of the lungs was shown. For the aerosol containing fibrogenic components always use the respirable fraction and concentration of fibrogenic components. If the aerosol contains less than 1% SiO₂ and does not contain asbestos, it is considered an aerosol not otherwise specified.

**Further information**

If the contents of fibrous constituent > 1% in the respirable fraction of the substance, the respirable fraction is calculated according to the formula: \( \text{NPHVr} = \frac{10}{\text{Fr}} \) (mg/m³), The respirable fraction is the part of the components of the solid aerosols <= 5 µm, which is taken from the air sample out of the respiration area of the employer with a specified method and which components can get through in the alveoli. Measurement of the
respirable fraction is according to the Johannesburg convention (STN EN 481). Measurement strategy, choosing the appropriate processing procedure and treatment should be taken from STN EN 482 and STN EN 689. Solid aerosols with a mainly fibrogenic influence, A insoluble solid aerosol will be considered as fibrogenic, if the substance contains more than 1% of a fibrogenic component and during animal test an obvious fibrogenic reaction of the lungs was shown. As fibrogenic are considered insoluble solid aerosols, including aerosol droplets containing more than 1% and during animal tests an obvious fibrogenic reaction of the lungs was shown. For the aerosol containing fibrogenic components always use the respirable fraction and concentration of fibrogenic components. If the aerosol contains less than 1% SiO2 and does not contain asbestos, it is considered an aerosol not otherwise specified.

<table>
<thead>
<tr>
<th>Substance</th>
<th>TWA (Solid aerosols, total fraction)</th>
<th>10 mg/m³ (Silica)</th>
<th>SK OEL (2011-11-23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>titanium dioxide</td>
<td>13463-67-7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Further information

The OEL for solid aerosols is determined as value of an average workday of the exposure to the total concentration of the solid aerosol (NPELc) or to the respiration fraction (NPELr). A workplace can be considered acceptable, if the appropriate solid aerosol complies with both OEL-values. In case components occur in a mixture, the OEL for the individual components of the mixture apply. Solid aerosols with a mainly fibrogenic influence, A insoluble solid aerosol will be considered as fibrogenic, if the substance contains more than 1% of a fibrogenic component and during animal test an obvious fibrogenic reaction of the lungs was shown. As fibrogenic are considered insoluble solid aerosols, including aerosol droplets containing more than 1% and during animal tests an obvious fibrogenic reaction of the lungs was shown. For the aerosol containing fibrogenic components always use the respirable fraction and concentration of fibrogenic components. If the aerosol contains less than 1% SiO2 and does not contain asbestos, it is considered an aerosol not otherwise specified.

<table>
<thead>
<tr>
<th>Substance</th>
<th>TWA (Solid aerosols, respirable fraction)</th>
<th>2 mg/m³</th>
<th>SK OEL (2011-11-23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>titanium dioxide</td>
<td>13463-67-7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Further information

The respirable fraction is the part of the components of the solid aerosols <= 5 µm, which is taken from the air sample out of the respiration area of the employer with a specified method and which components can get through in the alveoli. Measurement of the respirable fraction is according to the Johannesburg convention (STN EN 481). Measurement strategy, choosing the appropriate processing procedure and treatment should be taken from STN EN 482 and STN EN 689. Solid aerosols with a mainly fibrogenic influence, A insoluble solid aerosol will be considered as fibrogenic, if the substance contains more than 1% of a fibrogenic component and during animal test an obvious fibrogenic reaction of the lungs was shown. As fibrogenic are considered insoluble solid aerosols, including aerosol droplets containing more than 1% and during animal tests an obvious fibrogenic reaction of the lungs was shown. For the aerosol containing fibrogenic components always use the respirable fraction and concentration of fibrogenic components. If the aerosol contains less than 1% SiO2 and does not contain asbestos, it is considered an aerosol not otherwise specified.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

LUXAN D393

Version 2.2
Revision Date: 22.06.2018
SDS Number: 102000021499
Print Date: 19.11.2018
Date of first issue: 04.06.2014

| TWA (Solid aerosols, total fraction) | 10 mg/m³ | SK OEL (2007-06-20) |

**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>titanium dioxide</td>
<td>Workers</td>
<td>Inhalation</td>
<td>long term – local effects</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>long term – systemic effects</td>
<td>700 mg/kg</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>titanium dioxide</td>
<td>Soil</td>
<td>100 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td>0.127 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>1000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>1 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>100 mg/kg</td>
</tr>
<tr>
<td></td>
<td>STP</td>
<td>100 mg/l</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

**Personal protective equipment**

Eye protection : Safety glasses

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>Appearance</td>
<td>solid</td>
</tr>
<tr>
<td>Colour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>2.501 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
</tbody>
</table>

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Self-ignition : No data available
Auto-ignition temperature : No data available
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 : 2.5 - 3.01 g/cm³
Bulk density : 0.56 - 0.62 g/cm³
Water solubility : No data available
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: Stable under recommended storage conditions.

10.4 Conditions to avoid
Conditions to avoid: No data available

10.5 Incompatible materials

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.

Skin corrosion/irritation
Not classified based on available information.

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

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

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**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**
Not relevant

12.6 **Other adverse effects**

**Product:**

**Additional ecological information:**
No data available

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**SECTION 13: Disposal considerations**

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.

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).
   Volatile organic compounds : Law on the incentive tax for volatile organic compounds (VOCV)
   : no VOC duties

15.2 Chemical safety assessment
   This information is not available.

SECTION 16: Other information

Full text of other abbreviations

SK OEL : Slovakia. Chemical factors at work - Maximum acceptable exposure limits for chemical factors in the working environment

SK OEL / TWA : 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 Toxictant; 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; 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.

SK / EN