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

· Product identifier
  · Trade name: Alkaline-Cyanide Reagent Solution
  · Catalogue number: L530620

· Application of the substance / the preparation
  Reagent for water analysis

· Manufacturer/Supplier:
  Orbeco-Hellige, Inc.
  6456 Parkland Drive
  Sarasota, FL 34243
  USA
  phone: (941) 756-6410
  fax: (941) 727-9654
  www.orbeco.com
  Made in Germany

· Emergency telephone number: Chemtrec: 800-424-9300

2 Hazards identification

· Classification of the substance or mixture
  GHS06 Skull and crossbones
  Acute Tox. 3  H301  Toxic if swallowed.
  Acute Tox. 2  H310  Fatal in contact with skin.
  Acute Tox. 3  H331  Toxic if inhaled.

  GHS05 Corrosion
  Met. Corr.1  H290  May be corrosive to metals.
  Skin Corr. 1A  H314  Causes severe skin burns and eye damage.

  GHS09 Environment
  Aquatic Chronic 2  H411  Toxic to aquatic life with long lasting effects.

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC
  T; Toxic
  R23/24/25:  Toxic by inhalation, in contact with skin and if swallowed.

  C; Corrosive
  R34:  Causes burns.

  N; Dangerous for the environment
  R50/53:  Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

(Contd. on page 2)
Label elements

- **GHS label elements** The product is classified and labelled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** GHS05, GHS06, GHS09
- **Signal word** Danger

**Hazard-determining components of labelling:**

- Sodium cyanide
- Sodium hydroxide

**Hazard statements**

- H290 May be corrosive to metals.
- H301+H331 Toxic if swallowed or if inhaled.
- H310 Fatal in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements**

- P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P309 IF exposed or if you feel unwell:
- P310 Immediately call a POISON CENTER or doctor/physician.
- P361 Remove/Take off immediately all contaminated clothing.
- P405 Store locked up.

**Canadian Hazard Symbols:**

![Canadian Hazard Symbols]

**WHMIS classification:**

- D1A Very toxic material causing immediate and serious toxic effects
- E Corrosive material

**NFPA ratings (scale 0 - 4)**

- Health = 3
- Fire = 0
- Reactivity = 0

### 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** aqueous solution

**Composition and Information on Ingredients:**

<table>
<thead>
<tr>
<th>CAS: 143-33-9</th>
<th>Sodium cyanide</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 205-599-4</td>
<td>T+ R26/27/28; N R50/53</td>
</tr>
<tr>
<td>Index number: 006-007-00-5</td>
<td>R32</td>
</tr>
<tr>
<td></td>
<td>Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; Aquatic Acute 1, H400; Aquatic Chronic 1, H410</td>
</tr>
</tbody>
</table>

(Contd. on page 3)
Trade name: Alkaline-Cyanide Reagent Solution

CAS: 1310-73-2
EINECS: 215-185-5
Index number: 011-002-00-6
RTECS: WB4900000

sodium hydroxide
C R35
Met. Corr.1, H290; Skin Corr. 1A, H314
1-5%

CAS: 7732-18-5
EINECS: 231-791-2
RTECS: ZC 0110000

water, distilled, conductivity or of similar purity
90-100%

REACH - pre-registered substances All components are REACH pre-registered.

Additional information: For the wording of the listed risk phrases refer to section 16.

4 First aid measures

Description of first aid measures

General information:
Personal protection for the First Aider.
Provide oxygen treatment if affected person has difficulty breathing.
Keep warm, position comfortably and cover well.
Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing have been completely removed.

After inhalation:
Oxygen supply
Take affected persons into fresh air and keep quiet.
In case of unconsciousness remove to fresh air, apply artificial respiration, and consult a physician.
Call a doctor immediately.

After skin contact:
Immediately rinse with plenty of water.
Call a doctor immediately.

After eye contact:
Rinse opened eye for several minutes (15 min) under running water.
Call a doctor immediately.

After swallowing:
Rinse out mouth and then drink 1-2 glasses of water.
Call a doctor immediately.

Most important symptoms and effects, both acute and delayed
after resorption:
breathing difficulty
unconsciousness
headache
daze
vomiting
burns
coma
CNS disorders
cardiovascular disorders
cramps

Danger:
blockade of cellular respiration
Danger of disturbed cardiac rhythm.
Danger of gastric perforation.

Indication of any immediate medical attention and special treatment needed
If blue colouring appears (lips, ear-lobes, finger-nails), give oxygen treatment as quickly as possible.
antidotes: sodium thiosulfate, dimethylaminophenol

(Contd. on page 4)
5 Firefighting measures

- Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- For safety reasons unsuitable extinguishing agents:
  - Carbon dioxide
  - Water
- Special hazards arising from the substance or mixture
  - Formation of toxic gases is possible during heating or in case of fire.
  - Hydrogen
  - Cyanide compounds, sodium monoxide
  - Hydrogen cyanide (HCN)
- Advice for firefighters
  - Protective equipment:
    - Wear self-contained respiratory protective device.
    - Wear fully protective suit.
- Additional information
  - Collect contaminated fire fighting water separately. It must not enter the sewage system.
  - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
  - Ambient fire may liberate hazardous vapours.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  - Ensure adequate ventilation.
  - Mount respiratory protective device.
  - Wear protective equipment. Keep unprotected persons away.
- Environmental precautions:
  - Suppress gases/fumes/haze with water spray.
  - Do not allow product to reach sewage system or any water course.
  - Inform respective authorities in case of seepage into water course or sewage system.
- Methods and material for containment and cleaning up:
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
  - Absorb with liquid-binding material (sand, diatomite, universal binders).
- Reference to other sections
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

7 Handling and storage

- Precautions for safe handling
  - Open and handle receptacle with care.
  - Work only in fume cabinet.
  - Keep receptacles tightly sealed.
  - Ensure good ventilation/exhaustion at the workplace.
- Information about protection against explosions and fires:
  - Keep respiratory protective device available.
  - The product is not flammable.
- Conditions for safe storage, including any incompatibilities
- Storage:
- Requirements to be met by storerooms and receptacles:
  - Do not use light alloy receptacles.
  - Unsuitable material for receptacle: aluminium
Store in a cool location.

- **Information about storage in one common storage facility:** Do not store together with acids.
- **Further information about storage conditions:**
  - Keep receptacle tightly sealed.
  - Protect from heat and direct sunlight.
  - Protect from humidity and water.
  - Protect from exposure to the light.
  - Store under lock and key and with access restricted to technical experts or their assistants only.
- **Recommended storage temperature:** 20°C +/- 3° (approx. 68°F)
- **Storage class:** 6.1 B
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

#### Control parameters

- **Components with limit values that require monitoring at the workplace:**

  **143-33-9 sodium cyanide (5-10%)**
  - PEL (USA) 5 mg/m³
    - Skin
  - REL (USA) Short-term value: C 5* mg/m³, C 4.7* ppm
    - *10-min
  - TLV (USA) Short-term value: C 5 mg/m³ as CN, Skin
  - EL (Canada) Short-term value: C 5 mg/m³ as CN, Skin
  - EV (Canada) Skin

  **1310-73-2 sodium hydroxide (2.5-5%)**
  - PEL (USA) 2 mg/m³
  - REL (USA) Short-term value: C 2 mg/m³
  - TLV (USA) Short-term value: C 2 mg/m³
  - EL (Canada) Short-term value: C 2 mg/m³

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  - Avoid contact with the eyes and skin.
  - Do not eat, drink, smoke or sniff while working.
- **Breathing equipment:**
  - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
  - Use respiratory protective device against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Combination filter B-P3
- **Protection of hands:**
  - Alkaline resistant gloves
  - Preventive skin protection by use of skin-protecting agents is recommended.
  - After use of gloves apply skin-cleaning agents and skin cosmetics.
- **Material of gloves**
  - Nitrile rubber, NBR
  - Recommended thickness of the material: ≥ 0.35 mm
- **Penetration time of glove material**
  - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
  - Value for the permeation: Level ≥ 1 (10 min)
35.0.3

· Eye protection: Tightly sealed goggles
· Body protection: Alkaline resistant protective clothing

9 Physical and chemical properties

· Information on basic physical and chemical properties
  Odor Threshold: Not applicable.
  Appearance:
  Form: Fluid
  Color: Colorless
  Odor: Odorless
· pH-value at 20°C (68 °F): 13.7
· Melting point/Melting range: Undetermined.
· Boiling point/Boiling range: 100°C (212 °F)
· Freezing Point: Not applicable.
· Flash point: Not applicable.
· Flammability (solid, gaseous):
  Upper Flammable Limit: Not applicable.
  Lower Flammable Limit: Not applicable.
· Ignition temperature: Undetermined.
· Sensitivity to Mechanical Impact: None
· Sensitivity to Static Discharge: None
· Auto igniting: Product is not selfigniting.
· Danger of explosion: Product does not present an explosion hazard.
· Vapor Density: Not applicable.
· Specific Gravity: Not applicable.
· Density at 20°C (68 °F): 1.043 g/cm³ (8.704 lbs/gal)
· Solubility in / Miscibility with
  Water: Fully miscible.
· Coefficient of Water / Oil Distribution: Not applicable.
· Solvent content:
  Organic solvents: 0.0 %
  Water: > 90 %
· Solids content: < 6 %
· Other information No further relevant information available.

10 Stability and reactivity

· Reactivity
  Thermal decomposition / conditions to be avoided: To avoid thermal decomposition do not overheat.
  Possibility of hazardous reactions
    Corrosive action on metals.
    Corrodes aluminium and zinc.
    Reacts with metals forming hydrogen (Danger of explosion!)
    Reacts with acids releasing Hydrogen cyanide (prussic acid).
  Conditions to avoid No further relevant information available.
· Incompatible materials:
  organic substances
  acids
Trade name: Alkaline-Cyanide Reagent Solution

metals
aluminum
zinc
NHx

Hazardous decomposition products:
hydrogen cyanide (prussic acid)
see chapter 5

11 Toxicological information

Information on toxicological effects

Acute toxicity:

LD/LC₅₀ values that are relevant for classification:

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD₅₀</td>
<td>115 mg/kg (rat)</td>
<td>140 mg/kg (rabbit)</td>
<td>LC 50 9.1 mg/l(ATE 0.5)</td>
</tr>
<tr>
<td>LDLo</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD₅₀</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC 50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

143-33-9 sodium cyanide

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD₅₀</td>
<td>6.4 mg/kg (rat)</td>
<td>500 mg/kg (rabbit)</td>
</tr>
<tr>
<td>LDLo</td>
<td></td>
<td>2.8 mg/kg (human)</td>
</tr>
<tr>
<td>LDo</td>
<td></td>
<td>7.7 mg/kg (rabbit)</td>
</tr>
<tr>
<td>LD₅₀</td>
<td></td>
<td>(IUCLID)</td>
</tr>
</tbody>
</table>

1310-73-2 sodium hydroxide

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD₅₀</td>
<td>325 mg/kg (rat)</td>
<td>500 mg/kg (rabbit)</td>
</tr>
<tr>
<td>LDLo</td>
<td></td>
<td>(IUCLID)</td>
</tr>
</tbody>
</table>

Primary irritant effect:
• on the skin: Caustic effect on skin and mucous membranes.
• on the eye: Strong caustic effect
• Sensitization: No sensitizing effects known.

Additional toxicological information:
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach. The following complies to cyanogen compounds / nitriles in general: Utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration. repeated skin exposure can produce local skin destruction or dermatitis

Carcinogenic categories
• IARC (International Agency for Research on Cancer)
  None of the ingredients is listed.

• NTP (National Toxicology Program)
  None of the ingredients is listed.

Carcinogenicity: NTP? IARC Monographs? OSHA Regulated? see chapter 8 / 15
• Not found.

Teratogenicity: Not found.
Mutagenicity: Not found.
Reproductive Toxicity: Not found.
Synergistic Products: None
12 Ecological information

Toxicity

Aquatic toxicity:

<table>
<thead>
<tr>
<th>Compound</th>
<th>Aquatic Toxicity</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>143-33-9 sodium cyanide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50 0.083 mg/l/96h</td>
<td>Lepomis macrochirus (IUCLID)</td>
<td></td>
</tr>
<tr>
<td>LC50 0.057 mg/l/96h</td>
<td>Oncorhynchus mykiss (IUCLID)</td>
<td></td>
</tr>
<tr>
<td>LC50 0.12 mg/l/96h</td>
<td>Pimephales promelas (IUCLID)</td>
<td></td>
</tr>
<tr>
<td>1310-73-2 sodium hydroxide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daphnia EC50 76 mg/l/24h</td>
<td>Daphnia magna</td>
<td>(50% - MERCK)</td>
</tr>
<tr>
<td>LC50 80 mg/l/96h</td>
<td>Gambusia affinis (ECOTOX database)</td>
<td></td>
</tr>
<tr>
<td>LC50 99 mg/l/48h</td>
<td>Lepomis macrochirus (IUCLID)</td>
<td></td>
</tr>
</tbody>
</table>

Persistence and degradability
No further relevant information available.

Other information:
Quantitative data on the ecological effect of this preparation are not available.
CAS - Nr. 143-33-9: > 99% / 7 d

Bioaccumulative potential
No further relevant information available.

Behavior in environmental systems:

<table>
<thead>
<tr>
<th>Compound</th>
<th>Behavior in environmental systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>143-33-9 sodium cyanide</td>
<td></td>
</tr>
<tr>
<td>log P(o/w) 0.44 ( )</td>
<td></td>
</tr>
</tbody>
</table>

Mobility in soil
No further relevant information available.

Ecotoxicological effects:

<table>
<thead>
<tr>
<th>Remark</th>
<th>Additional ecological information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forms corrosive mixtures with water even if diluted.</td>
<td>CSB-value:</td>
</tr>
<tr>
<td>Very toxic for fish</td>
<td>143-33-9 sodium cyanide</td>
</tr>
<tr>
<td>High aquatic toxicity.</td>
<td>COD 0.816 g/g ( )</td>
</tr>
</tbody>
</table>

General notes:
Water danger class 3 (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
The product contains materials that are harmful to the environment.

Results of PBT and vPvB assessment
No data available

Other adverse effects
No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation:
Hand over to hazardous waste disposers.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Trade name: Alkaline-Cyanide Reagent Solution

- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.
  - **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

- **UN-Number**
  - DOT, ADR, IMDG, IATA: UN2922

- **UN proper shipping name**
  - DOT, IATA: CORROSIVE LIQUID, TOXIC, N.O.S. (SODIUM HYDROXIDE, SODIUM CYANIDE)
  - ADR: 2922 CORROSIVE LIQUID, TOXIC, N.O.S. (SODIUM HYDROXIDE, SODIUM CYANIDE), ENVIRONMENTALLY HAZARDOUS
  - IMDG: CORROSIVE LIQUID, TOXIC, N.O.S. (SODIUM HYDROXIDE, SODIUM CYANIDE), MARINE POLLUTANT

- **Transport hazard class(es)**
  - DOT / TDG:
    - **Class:** 8 Corrosive substances.
    - **Label:** 8+6.1
  - ADR:
    - **Class:** 8 (CT1) Corrosive substances
    - **Label:** 8+6.1
  - IMDG:
    - **Class:** 8 Corrosive substances.
    - **Label:** 8+6.1
  - IATA:
    - **Class:** 8 Corrosive substances.
    - **Label:** 8+6.1

- **Packing group**
  - DOT, ADR, IMDG, IATA: II

- **Environmental hazards:**
  - **Marine pollutant:** Symbol (fish and tree)
  - **Special marking (ADR):** Symbol (fish and tree)
Trade name: Alkaline-Cyanide Reagent Solution

<table>
<thead>
<tr>
<th>Special precautions for user</th>
<th>Warning: Corrosive substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danger code (Kemler):</td>
<td>86</td>
</tr>
<tr>
<td>EMS Number:</td>
<td>F-A,S-B</td>
</tr>
<tr>
<td>Segregation groups</td>
<td>Alkalis, cyanides</td>
</tr>
</tbody>
</table>

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.
- Transport/Additional information:
  - ADR
  - Limited quantity (LQ): 1L

### 15 Regulatory information

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

  - Section 355 (Extremely hazardous substances):
    - 143-33-9 sodium cyanide
  - Section 313 (Specific toxic chemical listings):
    - 143-33-9 sodium cyanide

- TSCA (Toxic Substances Control Act):
  - All ingredients are listed.

- Proposition 65

  - Chemicals known to cause cancer:
    - None of the ingredients is listed.

  - Chemicals known to cause reproductive toxicity for females:
    - None of the ingredients is listed.

  - Chemicals known to cause reproductive toxicity for males:
    - None of the ingredients is listed.

  - Chemicals known to cause developmental toxicity:
    - None of the ingredients is listed.

- Canadian Ingredient Disclosure List

  - Limit 0,1%:
    - None of the ingredients is listed.

  - Limit 1%:
    - 1310-73-2 sodium hydroxide

- Canadian Domestic Substances List (DSL)
  - All ingredients are listed.

- EPA (Environmental Protection Agency)
  - None of the ingredients is listed.

- NIOSH-Ca (National Institute for Occupational Safety and Health)
  - None of the ingredients is listed.

- OSHA-Ca (Occupational Safety & Health Administration)
  - None of the ingredients is listed.

- Australian Inventory of Chemical Substances
  - All ingredients are listed.
Trade name: Alkaline-Cyanide Reagent Solution

- **ENCS List (MITI):**
  - 143-33-9 sodium cyanide 1-158
  - 1310-73-2 sodium hydroxide 1-410

- **European EINECS**
  All ingredients are listed.

- **Standard for the Uniform Scheduling of Drugs and Poisons**
  1310-73-2 sodium hydroxide S5+APPENDIX C, S6+APPENDIX C

- **GHS label elements** The product is classified and labelled according to the Globally Harmonized System (GHS).
  - Hazard pictograms GHS05, GHS06, GHS09
  - Signal word Danger

- **Hazard-determining components of labelling:**
  - sodium cyanide
  - sodium hydroxide

- **Hazard statements**
  - H290 May be corrosive to metals.
  - H301+H331 Toxic if swallowed or if inhaled.
  - H310 Fatal in contact with skin.
  - H314 Causes severe skin burns and eye damage.
  - H411 Toxic to aquatic life with long lasting effects.

- **Precautionary statements**
  - P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
  - P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P309 IF exposed or if you feel unwell:
  - P310 Immediately call a POISON CENTER or doctor/physician.
  - P361 Remove/Take off immediately all contaminated clothing.
  - P405 Store locked up.

- **Information about limitation of use:**
  Employment restrictions concerning pregnant and lactating women must be observed.
  Employment restrictions concerning young persons must be observed.

- **Water hazard class:** Water danger class 3 (Self-assessment): extremely hazardous for water.

- **CPR Classification:**
  - Class D, Div. 1-A
  - Class E

- **This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR**

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

---

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
  - H290 May be corrosive to metals.
  - H300 Fatal if swallowed.
  - H310 Fatal in contact with skin.
  - H314 Causes severe skin burns and eye damage.
  - H330 Fatal if inhaled.
  - H400 Very toxic to aquatic life.
Trade name: Alkaline-Cyanide Reagent Solution

H410 Very toxic to aquatic life with long lasting effects.
R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.
R32 Contact with acids liberates very toxic gas.
R35 Causes severe burns.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Recommended restriction of use: professional/industrial use only

Contact: Orbeco-Hellige, Inc., Quality Assurance Dept., Phone: 941-756-6410

Abbreviations and acronyms:
- EC50: effective concentration, 50 percent (in vivo)
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- NFPA: National Fire Protection Association (USA)
- WHMIS: Workplace Hazardous Materials Information System (Canada)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent

Sources
- Data arise from manufacturers' data sheets, reference works and literature.
- IUCLID (International Uniform Chemical Information Database)
- International Chemical Safety Cards (ICSCs)
- GESTIS-Stoffdatenbank

* Data compared to the previous version altered.