1 Identification

- **Product identifier**
  - **Trade name:** UTP 8
  - **Application of the substance / the mixture:** Shielded Metal Arc Welding Electrode

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**
    voestalpine Böhler Welding UTP Maintenance GmbH
    Elsässer Straße 10
    D-79189 Bad Krozingen
    Tel. +49 7633 409 01
    Fax +49 7633 409 227
    welding.bk@voestalpine.com
  - **Information department:** Quality department
  - **Emergency telephone number:** +49 7633 409-151 (Mo - Do 8 - 17, Fr 8 - 13 Uhr)

2 Hazard(s) identification

- **Classification of the substance or mixture**
  The product is not classified according to the Globally Harmonized System (GHS).

  - **Label elements**
    - **GHS label elements** Void
    - **Hazard pictograms** Void
    - **Signal word** Void
    - **Hazard statements** Void
    - **NFPA ratings (scale 0 - 4)**
      Health = 0
      Fire = 0
      Reactivity = 0

  - **HMIS-ratings (scale 0 - 4)**
    ![HMIS-ratings image]
    Health = *1
    Fire = 0
    Reactivity = 0

- **Other hazards**
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
  - **Description:** Mixture of the substances listed below with nonhazardous additions.

  - **Dangerous components:**
    - **CAS:** 7440-02-0  
      **EINECS:** 231-111-4  
      **nickel**  
      - Carc. 2, H351; STOT RE 1, H372  
      - Skin Sens. 1, H317
      - **50-100%**
    - **CAS:** 513-77-9  
      **EINECS:** 208-167-3  
      **barium carbonate**  
      - Acute Tox. 4, H302
      - **5-12.5%**
Trade name: UTP 8

<table>
<thead>
<tr>
<th>CAS: 7782-42-5</th>
<th>Graphite</th>
<th>2.5-5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 231-955-3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 1344-09-8</th>
<th>Silicic acid, sodium salt</th>
<th>Skin Corr. 1C, H314; Eye Dam. 1, H318; STOT SE 3, H335</th>
<th>2.5-5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 215-687-4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 471-34-1</th>
<th>calcium carbonate</th>
<th>2.5-5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 207-439-9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 7789-75-5</th>
<th>calcium fluoride</th>
<th>0.1-2.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 232-188-7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 1312-76-1</th>
<th>silicato de potasio</th>
<th>Skin Irrit. 2, H315; Eye Irrit. 2B, H320</th>
<th>0.1-2.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 215-199-1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4 First-aid measures

- Description of first aid measures
- General information: No special measures required.
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- After eye contact: Rinse opened eye for several minutes under running water.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents: Suitable to surrounding conditions
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
- Protective equipment: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  - Ensure adequate ventilation
  - Use respiratory protective device against the effects of fumes/dust/aerosol.
- Environmental precautions: Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up: Pick up mechanically.
- 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

- Handling:
  - Precautions for safe handling: Ensure that suitable extractors are available on processing machines
  - Information about protection against explosions and fires: No special measures required.
8 Exposure controls/personal protection

- Control parameters
- Components with limit values that require monitoring at the workplace:
  
  The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
  
  At this time, the other constituents have no known exposure limits.

<table>
<thead>
<tr>
<th>Constituent</th>
<th>PEL Long-term value</th>
<th>REL Long-term value</th>
<th>TLV Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-02-0 nickel</td>
<td>1 mg/m³</td>
<td>0.015 mg/m³ as Ni; See Pocket Guide App. A</td>
<td>1.5* mg/m³ elemental, *inhalable fraction</td>
</tr>
<tr>
<td>513-77-9 barium carbonate</td>
<td>0.5 mg/m³ as Ba</td>
<td>0.5 mg/m³ as Ba</td>
<td>0.5 mg/m³ as Ba</td>
</tr>
<tr>
<td>7782-42-5 Graphite</td>
<td>15 mppcf* mg/m³ *impinger samples counted by light field techn.</td>
<td>2.5* mg/m³ *respirable dust</td>
<td>2* mg/m³ all forms except graphite fibers;*resp. fraction</td>
</tr>
<tr>
<td>471-34-1 calcium carbonate</td>
<td>15* 5** mg/m³ *total dust **respirable fraction</td>
<td>10* 5** mg/m³ *total dust **respirable fraction</td>
<td>TLV withdrawn</td>
</tr>
<tr>
<td>7789-75-5 calcium fluoride</td>
<td>2.5 mg/m³ as F</td>
<td>2.5 mg/m³ as F</td>
<td>2.5 mg/m³ as F, BEI</td>
</tr>
</tbody>
</table>
Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>BEI</th>
<th>Parameter</th>
<th>Concentration</th>
<th>Time</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>7789-75-5 calcium fluoride</td>
<td>2 mg/L</td>
<td>Fluoride (background, nonspecific)</td>
<td>5 mg/m³: urine</td>
<td>prior to shift</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 mg/L</td>
<td></td>
<td></td>
<td>end of shift</td>
<td></td>
</tr>
</tbody>
</table>

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

Exposure controls

- Personal protective equipment:
  - General protective and hygienic measures:
    - Wash hands before breaks and at the end of work.
    - The usual precautionary measures for handling chemicals should be followed.
  - Breathing equipment: Filter P2
  - Protection of hands:
    - Leather gloves
    - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
    - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
    - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
    - Heat protection gloves (non-combustible)
    - Rubber gloves
    - Acid resistant gloves
  - 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.
  - Eye protection:
    - Safety glasses
    - Wear helmet or use face shield with filter lens. Provide protective screens and flash goggles, if necessary, to shield others. As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go the next lighter shade which gives sufficient view of the weld zone.
  - Body protection:
    - Protective work clothing
    - Wear hand, head, and body protection which help to prevent injury from radiation, sparks, and electrical shock. See ANSI Z49.1. At a minimum this includes welder’s gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, and well as dark substantial clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

9 Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
    - Appearance:
      - Form: Solid
      - Color: According to product specification
      - Odor: Odorless
      - Odor threshold: Not determined.
43.0.3

- **pH-value:** Not applicable.
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not determined.
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not selfigniting.
- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**
  - Lower: Not determined.
  - Upper: Not determined.
- **Relative density** Not determined.
- **Vapor density** Not applicable.
- **Evaporation rate** Not applicable.
- **Water:** Insoluble.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Dynamic:** Not applicable.
- **Kinematic:** Not applicable.
- **Organic solvents:** 0.0 %
- **Other information** No further relevant information available.

### 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.
  - **Possibility of hazardous reactions** Attacks materials containing glass and silicate.
  - **Conditions to avoid** No further relevant information available.
  - **Incompatible materials:** No further relevant information available.
  - **Hazardous decomposition products:** Reasonably expected fume constituents of this product would include:
    - Copper oxide.
    - Copper oxide.
    - Nickel oxide.
    - Cobalt oxide.
  - **Hazardous decomposition products:** Reasonably expected gaseous constituents would include Carbon monoxide and Carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample from inside the welder's helmet if worn or in the worker's breathing zone. See ANSI/AWS F1.1 and ANSI/AWS F1.2-1992. In order to determine and evaluate of the existing problem areas, the standards EN ISO15011 –parts 1,4 can also be applied.

### 11 Toxicological information

- **Information on toxicological effects**
- **Additional toxicological information:**
  - The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

### Carcinogenic categories

- **IARC (International Agency for Research on Cancer)**
  - 7440-02-0 nickel 2B
  - 7789-75-5 calcium fluoride 3
  - 14807-96-6 Talc (Mg3H2(SiO3)4) 3

- **NTP (National Toxicology Program)**
  - 7440-02-0 nickel R

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

### 12 Ecological information

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability** No further relevant information available.
  - **Behavior in environmental systems:**
    - **Bioaccumulative potential** No further relevant information available.
    - **Mobility in soil** No further relevant information available.
  - **Additional ecological information:**
    - **General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.
  - **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation:** Must be specially treated adhering to official regulations.

- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- **Environmental hazards:**
  - **Marine pollutant:** No

- **Special precautions for user**
  - Not applicable.

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  - Not applicable.

- **Transport/Additional information:**
  - Not dangerous according to the above specifications.

- **UN "Model Regulation":**
  -
15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  No further relevant information available.

  **Sara**
  - **Section 355 (extremely hazardous substances):**
    None of the ingredient is listed

  - **Section 313 (Specific toxic chemical listings):**
    7440-02-0 nickel
    513-77-9 barium carbonate
    7439-96-5 manganese

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

  - **Proposition 65**
    - **Chemicals known to cause cancer:**
      7440-02-0 nickel
    - **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.

  - **Cancerogenity categories**
    - **EPA (Environmental Protection Agency)**
      513-77-9 barium carbonate
      7439-96-5 manganese
    - **TLV (Threshold Limit Value established by ACGIH)**
      7440-02-0 nickel
      513-77-9 barium carbonate
      7789-75-5 calcium fluoride
      14807-96-6 Talc (Mg3H2(SiO3)4)
    - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
      7440-02-0 nickel

  - **GHS label elements** Void
  - **Hazard pictograms** Void
  - **Signal word** Void
  - **Hazard statements** Void
  - **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.

- **Additional information:**
  Recommendations for exposure scenarios, measures for risk management and identification of working conditions under which metals, metal alloys and products made of metal can be safely worked can be found attached.
Detailed information can be found on our webpage www.voestalpine.com (Environment, REACH at voestalpine).

Welding Exposure Scenario WES - ENGL

Recommendations for Exposure Scenarios, Risk Management Measures and to identify Operational Conditions under which metals, alloys and metallic articles may be safely welded

Welding/Brazing produces fumes which can affect human health and the environment. Fumes are a varying mixture of airborne gases and fine particles which, if inhaled or swallowed, constitute a health hazard. The degree of risk will depend on the composition of the fume, concentration of the fume and duration of exposure. The fume composition is dependent upon the material being welded, the processes and consumables being used, coatings on the work such as paint, galvanizing or plating, or contaminants from cleaning and degreasing activities. A systematic approach to the assessment of exposure is necessary, taking into account the particular circumstances for the operator and ancillary worker that can be exposed.

Considering the emission of fumes when welding, brazing or setting of metals, it is recommended to (1) arrange risk management measures through applying general information and guidelines provided by this exposure scenario and (2) using the information provided by the Safety Data Sheet, issued in accordance with REACH, by the welding consumable manufacturer.

The employer shall ensure that the risk from welding fumes to the safety and health of worker's is eliminated or reduced to a minimum. The following principle shall be applied:
1. Select the applicable process/material combinations with the lowest class, wherever possible.
2. Set welding process with the lowest emission parameter.
3. Apply the relevant collective protective measures in accordance with class number. In general, the use of PPE is taken into account after all other measures are applied.
4. Wear the relevant personal protective equipment in accordance with the duty cycle.

In addition, compliance with the National Regulations regarding the exposure to welding fumes of workers and related personnel shall be verified.

In the latest "Risk Management Measures for individual process / material combinations", reference is made to the following standards for collective and personal protective measures:

- ISO 4905: Welding processes - Reference numericals according to ISO 4903
- EN ISO 15012-1:2004 Health and safety in welding and allied processes - Requirements testing and marking of equipment or air pollution - Part 1: Testing of the separation efficiency for welding fume
- EN ISO 15012-2:2009 Health and safety in welding and allied processes - Requirements, testing and marking of equipment for air filtration - Part 2: Determination of the minimum air volume flow rate of captor hoods and notations
- EN 149:2001 Respiratory protective devices - Filtering half masks to protect against particles - Requirements, testing, marking (FFP1 - FFP2 - FFP3)
- EN 1354:2006 Respiratory protective devices. Light duty construction compressed air breathing apparatus incorporating a helmet or a hood. Requirements, testing, marking (LDEH - LDDEH - LDH)
- EN 1249:1995 Respiratory protective devices. Powered breathing devices incorporating a helmet or a hood.
- EN 143:2000 Respiratory protective devices - Particle filters - Requirements, testing, marking (P1, P2, P3)
- Directive 1998/24/EC Article 6.2 on the protection of the health and safety of workers from the risks related to chemical agents at work
- BGR 190 Berufsgenossenschaftliche Regelleitung für Sicherheit und Gesundheit bei der Arbeit
- TRGS 526 Schweissotechnische Arbeitsstätten (Technische Regeln für Gefahrstoffe)

Also in the table "Risk Management Measures for individual process / material combinations", reference is made to footnotes.

- a The description of these footnotes:
  - class: approximate ranking to mitigate risk by selecting process/material combinations with the lowest value.
  - identified collective and individual risk management measures shall be applied
  - Personal Protective Equipment (PPE) required avoiding exceeding the National Exposure Limit Value (SC: Daily cycle expressed on 9 hours)
  - General Ventilation (GV) low. With additional Local Exhaust Ventilation (LEV) and extracted air to the outside, the GV or LEV capacity may be reduced to 1/5 of the original requirement.
  - General Ventilation (GV) medium (double compared to Low)
  - Filtering half mask (FFP2)
  - When an allowed consumable is used, measures from "class 9" are required
  - General Ventilation (GV) Low. When no Local Exhaust Ventilation, the ventilation requirement is 5-fold.
  - Filtering half mask (FFP3), helmet with powered filters (TH-502), or helmet with external air supply (LDHE)
  - Reduced (negative) pressured area: A separate, ventilated area where reduced (negative) pressure, compared to the surrounding area, is maintained to prevent contaminant fumes from entering the area.
  - Local Exhaust Ventilation (LEV) High, extraction at source (includes table, hood, arm or torch extraction)
  - Local Exhaust Ventilation (LEV) Low, extraction at source (includes table, hood, arm or torch extraction)
  - Local Exhaust Ventilation (LEV) Medium, extraction at source (includes table, hood, arm or torch extraction)
  - Recommended measures to comply with national maximum allowable limits. Extracted fumes, for all materials except unalloyed steel and aluminium, shall be filtered before release in the outdoor environment.
  - A confined space, despite its name, is not necessarily small. Examples of confined spaces include ship, silos, vats, utility vaults, tanks, etc.
  - A supplied air helmet, designed to avoid direct flow of welding fumes inside

Not applicable
Not recommended

(Contd. on page 9)
### Safety Data Sheet

**acc. to OSHA HCS**

**Printing date 07/27/2016**  
**Reviewed on 07/22/2016**

**Trade name: UTP 8**

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**Risk Management Measures for individual process / base material combinations**

<table>
<thead>
<tr>
<th>Class</th>
<th>Process (according to ISO 9001)</th>
<th>Base Materials</th>
<th>Remarks</th>
<th>Ventilation / Extraction / Filtration(^*)</th>
<th>PPE (\text{Bd} \times \text{Dh} \times \text{Hk})</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>GTAW 14</td>
<td>All</td>
<td>Except Aluminium &amp; Zr-base alloys</td>
<td>GV low (\text{Bd} \times \text{Dh})</td>
<td>n.r.</td>
</tr>
<tr>
<td>I</td>
<td>MIG/MAG 15</td>
<td>All</td>
<td>Except Aluminium &amp; Zr-base alloys</td>
<td>GV medium (\text{Bd} \times \text{Dh})</td>
<td>n.r.</td>
</tr>
<tr>
<td>II</td>
<td>TIG 16</td>
<td>All</td>
<td>Except Co-alloys</td>
<td>GV high (\text{Bd} \times \text{Dh})</td>
<td>n.r.</td>
</tr>
<tr>
<td>III</td>
<td>FCAW 17</td>
<td>All</td>
<td>Except stainless &amp; Ti-base alloys</td>
<td>Improved helmet (\text{Bd} \times \text{Dh})</td>
<td>FFP2 (\text{Bd} \times \text{Dh})</td>
</tr>
<tr>
<td>III</td>
<td>GMAW 18</td>
<td>All</td>
<td>Except Cu-base alloys</td>
<td>Improved helmet (\text{Bd} \times \text{Dh})</td>
<td>FFP2 (\text{Bd} \times \text{Dh})</td>
</tr>
<tr>
<td>III</td>
<td>Powder Plasma Arc 19</td>
<td>All</td>
<td>Except Cu-base alloys, Ni-base alloys &amp; Stainless</td>
<td>Improved helmet (\text{Bd} \times \text{Dh})</td>
<td>FFP2 (\text{Bd} \times \text{Dh})</td>
</tr>
<tr>
<td>IV</td>
<td>All processes class I</td>
<td>Painted / primed / coated</td>
<td>No Pb containing primer</td>
<td>GV low (\text{Bd} \times \text{Dh})</td>
<td>FFP2 (\text{Bd} \times \text{Dh})</td>
</tr>
<tr>
<td>IV</td>
<td>All processes class II</td>
<td>Painted / primed / coated</td>
<td>No Pb containing primer</td>
<td>GV high (\text{Bd} \times \text{Dh})</td>
<td>FFP2 (\text{Bd} \times \text{Dh})</td>
</tr>
<tr>
<td>V</td>
<td>MIG/MAG 20</td>
<td>Stainless, Ni-base &amp; V-alloys</td>
<td>n.a.</td>
<td>LEV High (\text{Bd} \times \text{Dh})</td>
<td>THSP3, LDH3, THSP3, LDH3</td>
</tr>
<tr>
<td>V</td>
<td>FCAW 21</td>
<td>Stainless, Ni-base &amp; V-alloys</td>
<td>n.a.</td>
<td>Reduced (negative) pressured area (\text{Bd} \times \text{Dh})</td>
<td>THSP3, LDH3, THSP3, LDH3</td>
</tr>
<tr>
<td>V</td>
<td>GMAW 22</td>
<td>Ni-base &amp; Co-alloys</td>
<td>n.a.</td>
<td>Reduced (negative) pressured area (\text{Bd} \times \text{Dh})</td>
<td>THSP3, LDH3, THSP3, LDH3</td>
</tr>
<tr>
<td>V</td>
<td>Powder Plasma Arc 23</td>
<td>Stainless, Ni-base &amp; Co-alloys</td>
<td>n.a.</td>
<td>Reduced (negative) pressured area (\text{Bd} \times \text{Dh})</td>
<td>THSP3, LDH3, THSP3, LDH3</td>
</tr>
<tr>
<td>VI</td>
<td>GMAW 24</td>
<td>All</td>
<td>Painted / primed / coated</td>
<td>Reduced (negative) pressured area (\text{Bd} \times \text{Dh})</td>
<td>THSP3, LDH3, THSP3, LDH3</td>
</tr>
<tr>
<td>VI</td>
<td>Self shielded FCAW 25</td>
<td>Steel, all steel</td>
<td>Painted / primed / coated</td>
<td>Reduced (negative) pressured area (\text{Bd} \times \text{Dh})</td>
<td>THSP3, LDH3, THSP3, LDH3</td>
</tr>
<tr>
<td>VII</td>
<td>Self shielded FCAW 26</td>
<td>Steel, all steel</td>
<td>Painted / primed / coated</td>
<td>Reduced (negative) pressured area (\text{Bd} \times \text{Dh})</td>
<td>THSP3, LDH3, THSP3, LDH3</td>
</tr>
<tr>
<td>VII</td>
<td>All</td>
<td>All</td>
<td>Painted / primed / coated</td>
<td>Reduced (negative) pressured area (\text{Bd} \times \text{Dh})</td>
<td>THSP3, LDH3, THSP3, LDH3</td>
</tr>
<tr>
<td>VIII</td>
<td>All</td>
<td>All</td>
<td>Closed system</td>
<td>Reduced (negative) pressured area (\text{Bd} \times \text{Dh})</td>
<td>THSP3, LDH3, THSP3, LDH3</td>
</tr>
</tbody>
</table>

**Closed system or Confined space\(^a\)**

- Department issuing SDS: Quality assurance department  
- Contact: Wilfried Wangler  
- Date of preparation / last revision 07/27/2016 / 1  
- Abbreviations and acronyms:  
  - ACGIH: American Conference of Governmental Industrial Hygienists  
  - EINECS: European Inventory of Existing Commercial Chemical Substances  
  - ELINCS: European List of Notified Chemical Substances  
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)  
  - NFPA: National Fire Protection Association (USA)  
  - HMIS: Hazardous Materials Identification System (USA)  
  - TRGS: Technische Regeln für Gefahrstoffe (Technical Rules for Dangerous Substances, BAuA, Germany)

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(Contd. of page 10)
Trade name: UTP 8

PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1C: Skin corrosion/irritation – Category 1C
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B
Skin Sens. 1: Skin sensitisation – Category 1
Carc. 2: Carcinogenicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1