### Marking of non-electrical equipment for use in potentially explosive atmospheres

#### Conditions and subdivisions

<table>
<thead>
<tr>
<th>Flammable materials</th>
<th>Temperature behaviour of explosion atmosphere</th>
<th>Classification of hazardous areas</th>
<th>Required marking on the usable operating equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>T1 to T6</td>
<td>Zone 0</td>
<td>Ex h, Ex p</td>
</tr>
<tr>
<td>Dust</td>
<td>T1 to T6</td>
<td>Zone 0</td>
<td>Ex h, Ex p</td>
</tr>
</tbody>
</table>

#### Subdivisions of gases and vapours

<table>
<thead>
<tr>
<th>Gases and vapours</th>
<th>Assignment of gases and vapours according to the ignition temperature</th>
<th>Temperature classes</th>
<th>Maximum surface temperature of equipment</th>
<th>Permissible temperature classes of equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable gases</td>
<td>&lt; 100 °C</td>
<td>T1</td>
<td>&lt; 100 °C</td>
<td>T1 to T6</td>
</tr>
<tr>
<td></td>
<td>&gt; 100 °C &lt; 200 °C</td>
<td>T2</td>
<td>&lt; 200 °C</td>
<td>T2 to T6</td>
</tr>
<tr>
<td></td>
<td>&gt; 200 °C &lt; 300 °C</td>
<td>T3</td>
<td>&lt; 300 °C</td>
<td>T3 to T6</td>
</tr>
<tr>
<td></td>
<td>&gt; 300 °C &lt; 450 °C</td>
<td>T4</td>
<td>&lt; 450 °C</td>
<td>T4 to T6</td>
</tr>
<tr>
<td></td>
<td>&gt; 450 °C</td>
<td>T5</td>
<td>&lt; 550 °C</td>
<td>T5 to T6</td>
</tr>
</tbody>
</table>

#### Use of the operating equipment

- **Marking**
  - Equipment groups
  - Dust: Ex d, Ex e
  - Gas: Ex h

- **Conditions**
  - without special conditions of use
  - with special conditions of use

- **Ignition temperature of dust**
  - Temperature of the air layer: \( T_{\text{layer}} \)
  - Permissible temperature of the air layer: \( T_{\text{layer}} \) or \( T_{\text{layer}} \) for dust: \( T_{\text{layer}} < T_{\text{layer}} \)

- **Groups of dust**
  - Dust: Ex d, Ex e

#### Protection principle/types of protection

- **Applications**
  - Flammable materials
  - Protection principle
  - Type of protection
  - Symbol
  - Notes

- **Equipment groups**
  - Dust: Ex d, Ex e
  - Gas: Ex h

- **Equipment marking**
  - Marking conditions
  - Additional symbols
  - CE conformity
  - Directive 2014/34/EU
  - EN 13463-1 ff
  - EN ISO 80079-36

### Example:

**Gas**

- **Marking**
  - CE NB
  - Ex h

- **Equipment groups**
  - II 2G
  - GB

- **Subdivisions of gases and vapours**
  - T4
  - Gb

- **Maximum surface temperature of equipment**
  - NB: 16 ATEX 1234 X

### Application in hazardous area

- **Zone 0/20**
  - Zone 1/21
  - Zone 2/22

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**Legend:**
- **E** Extrinsic
- **d** dust
- **p** partially
- **Ex d** explosion proof by partial disconnection
- **Ex p** explosion proof by nonelectric restriction
- **Ex c** explosion proof by constructional safety
- **Ex h** explosion proof by enclosure
- **Ex n** explosion proof by protection against ignition
- **Ex fu** flameproof
- **Ex fu** flameproof with filler material
- **Ex s** safety not specified
- **Ex s** safety not defined
- **Ex t** direct temperature control
- **Ex t** direct temperature control

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