



Your **MSDS** expert

## Readaction of the german regulation TRGS510

<http://www.msds-europe.com>

ToxInfo Consultancy and Service Limited Partnership

[www.msds-europe.com](http://www.msds-europe.com)

Tel.: +36 70 335 8480

Fax: +36 1 290 4136

H - 1143 Budapest, Eleonóra u. 8. Hungary

[office@msds-europe.com](mailto:office@msds-europe.com)

### **1.: Explosive substances:**

- are classified as „explosive substance“ in CLP regulation, are instable, explosive, and are included in the classes 1.1-1.5 of the UN Recommendations on the Transport of Dangerous Goods
- H-phrases: H200, H201, H202, H203, H204, H205
- are included in class 1. and in the subclass 1.1-1.6 of the UN Recommendations on the Transport of Dangerous Goods

### **2A.: Gases**

- CLP regulation:
  - are classified as compressed, liquefied, pressurized gases (H280, H281)
  - are classified as flammable gases (H220, H221)
  - are classified as oxidizing gases (H270)
- are included in class 2. of the UN Recommendations on the Transport of Dangerous Goods. This class also includes hydrogen fluoride (UN1051) and hydrogen cyanide

### **2B.: Aerosols**

- are indicated in accordance with CLP with the H-statements H222 or H223
- have the UN Number 1950
- the packages of pressurized gases are also included in this category

### **3.: Flammable liquids**

- are indicated in accordance with the German dangerous substances regulation (GefStoffV) with the R-sentences R10, R11, or R12
- are indicated in accordance with CLP with the H-statements H224, H225 or H226
- are included in class 3. of the UN Recommendations on the Transport of Dangerous Goods
- the viscous flammable liquids are not necessarily included in this category, depending on the viscosity, other properties have to be examined, like the extent of promoting the spread of fire or if they can produce explosive products. Depending on these properties, they can also fall under the 10. category.

### **4.1A.: Other explosive substances**

- are included in the classes I, II, III of the 2. German regulation of explosive substances (2. SprengV)

*Excerpt from the 2. German regulation of explosive substances (2. SprengV):*

#### Storage class I.:

The substances in this group are burning violently when exposed to strong thermal effect. The fire spreads rapidly. The packaging can explode due to a minor pressure; the entire content can implement. As a result of the explosion, some burning packages can fly across the area. The threat of the environment caused by the flying objects is minor. The risk of pressure on the surrounding buildings does not exist. This storage class is divided into subclass IA and IB.

The subclass IA includes the substances, which have a revised substance flow Ak of > 300 kg/min.

The subclass IB includes the substances, which have a revised substance flow Ak of > 140 kg/min, but < 300 kg/min.

Storage class II.:

The substances in this group are burning violently when exposed to strong thermal effect. The fire spreads rapidly. The packaging can explode due to a minor pressure, but the content of the package does not implement completely. The primary danger for the environment is the fire and the high temperature. The risk of pressure on the surrounding buildings does not exist.

The storage class II. includes the substances, which have a revised substance flow Ak of > 60 kg/min, but < 140 kg/min.

Storage class III.:

The substances in this group are flammable, the rate of fire is similar to the fire of combustible materials.

The storage class II. includes the substances, which have a revised substance flow of Ak < 60 kg/min.

- self-reactive substances type A or B, with the H-statements H240 or H241
- organic peroxides type A or B, with the H-statements H240 or H241
- substances, which are indicated in accordance with the German dangerous substances regulation (GefStoffV) with the R-sentences R2 or R3

**4.1 B.: Flammable solid substances**

- are indicated in accordance with CLP with the H-statement H228
- are classified as solid substances in accordance with the German dangerous substances regulation (GefStoffV) and are indicated with the R-sentence R11
- which are classified as flammable solid substances or desensitizing explosive solid substances (class 4.1) in accordance with the German dangerous goods law
- substances, which belong to the class 4.1, but have no R-sentence. have to be examined individually (this category also includes sulfur, naphthalene and para-formaldehyde)

**4.2.: Pyrophoric, or self-heating substances:**

- which are indicated in accordance with CLP with the H-statements H250, H251, H252
- which are indicated in accordance with the German dangerous substances regulation (GefStoffV) with the R-sentence R17
- which are classified as pyrophoric substances (class 4.2) in accordance with the German dangerous goods law

**4.3.: Hazardous substances that in contact with water emit flammable gases**

- which are indicated in accordance with CLP with the H-statements H260, H261
- which are indicated in accordance with the German dangerous substances regulation (GefStoffV) with the R-sentence R15
- which are classified as self-igniting substances (class 4.3) in accordance with the German dangerous goods law

### 5.1A.: Strong oxidizing substances:

- are indicated with one of the following UN Number:  
1445, 1447, 1449, 1450, 1452, 1453, 1455, 1461, 1462, 1470, 1471, 1472, 1475, 1479, 1481, 1483, 1484, 1485, 1489, 1491, 1494, 1495, 1496, 1502, 1504, 1506, 1508, 1510, 1745, 1746, 1748, 1873, 2015, 2466, 2495, 2547, 2723, 2741

### 5.1B.: Oxidizing substances:

- are not indicated with one of the UN Numbers listed in 5.1.A.
- wich are indicated in accordance with CLP with the H-statements H271, H272
- wich are classified as dangerous substances (class 5.1) in accordance with the german dangerous goods law

### 5.1C.: Ammonium nitrate and mixtures containing ammonium nitrate:

- wich in accordance with the german dangerous substances regulation (GefStoffV) belong in the classes A-C and subclasses D III, or D IV:

*Excerpt from the german dangerous substances regulation (GefStoffV):*

Subclass	Ammonium nitrate content (%)	Other substances	Special determination
A I	≥ 90	chloride content ≤ 0,02 % inert materials ≤ 10 %	further ammonium salts are not allowed
A II	> 80 - < 90	limestone, dolomite, or calcium carbonate < 20 %	
A III	> 45 - < 70	ammonium sulfate	inert materials are allowed
A IV	> 70 - < 90	potassium salts, phosphates in NP-, NK- or NPK-fertilizer; sulphates in N-fertilizer; inert material	
B I	≤ 70	potassium salts, phosphates, inert material or other ammonium salts in NK- or NPK- fertilizer	in case, when the ammonium nitrate alone exceeds 45% of the total mass, the combined total mass of ammonium nitrate and other ammonium salts must not exceed 70% of the total weight of the preparation
B II	≤ 45	surplus nitrates ≤ 10 %	unrestricted combustible material content; the surplus nitrates in addition with ammonium nitrate are counted as potassium nitrate
C I	≤ 80	limestone, dolomite, or calcium carbonate ≥ 20 %	limestone, dolomite, or calcium carbonate with a purity of at least 90 %
C II	≤ 70	inert material	

C III	≤ 45	phosphates and other ammonium salts in NP-fertilizer	
	> 45 - < 70	phosphates and other ammonium salts in NP-fertilizer	the combined total mass of ammonium nitrate and other ammonium salts must not exceed 70% of the total weight of the preparation
C IV	≤ 45	ammonium sulfate	inert material are allowed
D III	≤ 70	ammonium, water	in aqueous solution
D IV	> 70 - ≤ 93	water	in aqueous solution

### 5.2.: Organic peroxides and selfigniting substances:

- the organic peroxides are included in the german accident prevention regulation (BGV B4) in the classes OP I-OP IV.

*Excerpt from the german accident prevention regulation (BGV B4):*

#### Hazard class OP I:

The peroxides in this group are burning violently when exposed to strong thermal effect. The fire spreads rapidly. The packaging can explode due to a minor pressure; the entire content can implement. As a result of the explosion, some burning packages can fly across the area. The threat of the enviroment caused by the flying objects is minor. The risk of pressure on the surrounding buildings does not exist.

This hazard class is divided into subclass IA and IB.

The subclass IA includes those organic peroxides, wich have a revised substance flow  $A_k$  of  $\geq 300$  kg/min.

The subclass IB includes those organic peroxides, wich have a revised substance flow  $A_k$  of  $\geq 140$  kg/min, but  $< 300$  kg/min.

#### Hazard class OP II:

The peroxides in this group are burning violently when exposed to strong thermal effect. The fire spreads rapidly. The packaging can explode due to a minor pressure, but the content of the package does not implement completely. The primary danger for the enviroment is the fire and the high temperature. The risk of pressure on the surrounding buildings does not exist.

The hazard class II. includes those organic peroxides, wich have a revised substance flow  $A_k$  of  $> 60$  kg/min, but  $< 140$  kg/min.

#### Hazard class OP III:

The peroxides in this group are flammable, the rate of fire is similar to the fire of combustibile materials.

The storage class II. includes those organic peroxides, wich have a revised substance flow of  $A_k < 60$  kg/min.

#### Hazard class OP IV:

The peroxides in this group are difficult to ignite, and bur slowly. The enviroment is practically exposed to no risk. A revised substance flow ( $A_k$ ) for this class cannot be given.

- type C, D, E, F and type C, De, E, F self-degradable materials, wich are indicated in accordance with CLP with the H-statement H242

- each organic peroxide type A or B
- which are classified as self-degradable substances (class 4.1) in accordance with the German Dangerous Goods Law, unless they are self-degradable substances type A or B

**6.1.A.: Combustible, acute toxic cat. 1. és 2. /highly toxic materials:**

- which are indicated in accordance with CLP with the H-statements H300, H310 or H330
- which are indicated in accordance with the German Dangerous Substances Regulation (GefStoffV) with the R-sentences R26, R27 or R28
- which belong to the class 6.1, and packaging group I. or II. according to the German Dangerous Goods Law

**6.1.B.: Non combustible, acute toxic cat. 1. és 2. /highly toxic materials:**

- meet the criteria under listed under 6.1.A., but:
  - are non combustible liquids, except aqueous solutions, which contain combustible, highly toxic substances
  - are non combustible solid substances

**6.1.C.: Combustible, acute toxic cat. 3. /substances, which are toxic or cause chronic effects:**

- combustible, substances with acute or chronic effects
- which are indicated in accordance with CLP with the H-statements H301, H311, H331, H340, H350, H360, H370, H372
- which are indicated in accordance with the German Dangerous Substances Regulation (GefStoffV) with the R-sentences R23, R24, R25, R45, R49, R60, R61, R39/23- R39/28, R48/23- R48/28
- which belong to the class 6.1, and packaging group III. according to the German Dangerous Goods Law

**6.1.D.: Non combustible, acute toxic cat. 3. /substances, which are toxic or cause chronic effects:**

- substances listed under 6.1.C, but are non combustible

**6.2.: Contagious substances**

- which belong to the class 6.2 in accordance with the German Dangerous Goods Law

**7.: Radioactive substances:**

- are according to 4th paragraph of the German Radiation Safety Regulation (StrlSchV) need to be licensed or their presentation is required
- which belong to the class 7. in accordance with the German Dangerous Goods Law

**8.: Corrosive substances:**

- which are indicated in accordance with CLP with the H-statement H314
- which are indicated in accordance with the German Dangerous Substances Regulation (GefStoffV) with the R-sentences R 34 or R35
- which belong to the class 8. in accordance with the German Dangerous Goods Law

**8.A.: Combustible corrosive substances:**

- liquids with a flash point > 55 °C
- combustible solid substances
- which meet the criteria of class 8.

**8.B.: Non combustible corrosive substances:**

- non combustible liquids
- non combustible solid substances

- which meet the criteria of class 8.

**10.: Combustible liquids:**

- all liquids, which don't meet the requirements of the classes 1-9. of the German Dangerous Goods Law
- have a flash point > 60°C

**11.: Combustible solid substances:**

- combustible solid material
- the degree of combustibility can be determined according to the 1. page of VDI 2263 (it can be classified as: 2, 3, 4, 5)

**12.: Non combustible liquids:**

- non combustible liquids
- have a low tendency to ignite

**13.: Non combustible solid substances:**

- non combustible solid material, which don't meet the requirements stated under class 11.