

## GHS Classification

**ID1323**

**Oleum**

**CAS 8014-95-7**

Date Classified: Feb. 20, 2007 (Environmental Hazards: Mar. 31, 2006)

**Physical Hazards**

Reference Manual: GHS Classification Manual (Feb. 10, 2006)

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Explosives	Not applicable	-	-	-	There are no chemical groups associated with explosive properties present in the molecules. (Since the content of sulfur trioxide varies the property of the substance, it is either liquid or solid; at room temperature, it is usually liquid, but it could be solid due to the contents of the sulfur trioxide.)
2 Flammable gases	Not applicable	-	-	-	Liquid or Solid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Liquid or Solid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Liquid or Solid (GHS definition)
6 Flammable liquids	Not classified	-	-	-	Non-combustible (ICSC(J), 2002).
7 Flammable solids	Not classified	-	-	-	Non-combustible (ICSC (J) (2002))
8 Self-reactive substances and mixtures	Not applicable	-	-	-	There are no chemical groups associated with explosive or self-reactive properties present in the molecule.
9 Pyrophoric liquids	Not classified	-	-	-	Not combustible (ICSC (J), 2002)
10 Pyrophoric solids	Not classified	-	-	-	Non-combustible (ICSC (J), 2002)
11 Self-heating substances and mixtures	Not classified	-	-	-	Not combustible (ICSC(J) (2002))
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	-	-	-	Metals or metalloids (B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At) is not included. In addition, it reacts violently with water and humidity, and heat and sulfates are generated. However, sulfate is nonflammable.
13 Oxidizing liquids	Not classified	-	-	-	Not classified because of UNRTDG No. 1831, Class: 8(6.1), PG I (not Class: 5.1) though it is a strong oxidizing agent (ICSC(J), 2005)
14 Oxidizing solids	Not classified	-	-	-	Not classified because of UNRTDG No. 1831, Class: 8(6.1), PGI (not Class: 5.1), though it is a strong agent (ICSC(J), 2005)
15 Organic peroxides	Not applicable	-	-	-	Inorganic compound
16 Corrosive to metals	Classification not possible	-	-	-	Although UNRTDG is classified into 8 (6.1) and I according to the UNRTDG No. (1831), identification with skin corrosivity cannot be performed. Since the information which leads to corrosion behavior also was not found, it cannot be classified. In addition, ICSC (J) (2005) has a statement that the aqueous solutions of this product indicate corrosion behavior.

**Health Hazards**

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Classification not possible	-	-	-	No data available
1 Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Solid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: dust, mist)	Category 3	Skull and crossbones	Danger	Toxic if inhaled	It was set as Category 3 based on rat inhalation LC50 = 347ppm/1H (= 86.7ppm/4H = 0.63mg/L/4H, molecular weights are set to 178.14, and it is guessed as mist) (RTECS (1995)).
2 Skin corrosion / irritation	Category 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	Since there is the description that caustic is indicated to human skin (ICSC (J), (2002)), and there is a case that this product caused a skin burn when sprayed on the worker's face (HSDB (2003)), it was set as category 1A-1C. In addition, further categorizing from this information is difficult.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Since there is description that caustic is caused to the human eye (ICSC(J)(2002)), and it is classified into Category 1 according to skin corrosion/irritation, it is set as Category 1.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	No data available
5 Germ cell mutagenicity	Classification not possible	-	-	-	No data available

6	Carcinogenicity	Category 1A	Health hazard	Danger	May cause cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	As strong inorganic acid mists including sulfuric acids such as this product, the classification of IARC was 1 (IARC 54 (1992)), the classification of NTP was K (NTP Roc (11th, 2005)) and the classification of ACGIH was A2 (ACGIH (7th, 2004)). Therefore, it was set to Category 1A based on most updated evaluation document according to classification guidelines.
7	Toxic to reproduction	Classification not possible	-	-	-	No data available
8	Specific target organs/systemic toxicity following single exposure	Category 2 (inhalation: respiratory, oral; digestive system)	Health hazard	Warning	May cause damage to organs (inhalation:respiratory, oral;digestive system)	Since there are descriptions that significant effect such as pulmonary edemas appear in lungs by inhalation of this product in the document of Priority 2 (ICSC (J) (2002), HSDB (2003)), caustic is indicated to an airway (ICSC (J) (2002)), moreover, the corrosion of esophageal mucosa, gastric bleeding, etc. are produced by intake (ICSC (J) (2002)), HSDB (2003), it was considered as Category 2 (inhalation: the respiratory system, oral; gastrointestinal).
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (lung, tooth)	Health hazard	Warning	May cause damage to organs (lung, tooth) through prolonged or repeated exposure	It was classified into Category 2 (lungs, tooth) based on the description that the human lungs and tooth may be risked in repeated or long-term aerosol exposure of the this product (ICSC (J), (2002) the document of Priority 2).
10	Aspiration hazard	Classification not possible	-	-	-	No data available

### Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11 Hazardous to the aquatic environment (acute)	Classification not possible	-	-	-	No data available
11 Hazardous to the aquatic environment (chronic)	Classification not possible	-	-	-	No data available.