

GHS Classification

ID26

Divanadium pentaoxide

CAS 1314-62-1

Date Classified: Mar. 23, 2006 (Environmental Hazards: Feb. 10, 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	—	—	—	Containing no atom groups with explosive properties
2 Flammable gases	Not applicable	—	—	—	Classified as "solid" according to GHS definition
3 Flammable aerosols	Not applicable	—	—	—	Not aerosol products
4 Oxidizing gases	Not applicable	—	—	—	Classified as "solid" according to GHS definition
5 Gases under pressure	Not applicable	—	—	—	Classified as "solid" according to GHS definition
6 Flammable liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
7 Flammable solids	Not classified	—	—	—	Non-flammable (ICSC,2004)
8 Self-reactive substances and mixtures	Not applicable	—	—	—	Containing no atom groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
10 Pyrophoric solids	Not classified	—	—	—	Non-combustible (ICSC,2004)
11 Self-heating substances and mixtures	Not classified	—	—	—	Non-combustible (ICSC,2004)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	—	—	—	Stable to water - water solubility: 0.8g/100mL, ICSC (2004)
13 Oxidizing liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
14 Oxidizing solids	Not classified	—	—	—	Based on the classification by UN Recommendations on the Transport of Dangerous Goods (Category 6.1, UN#2862)
15 Organic peroxides	Not applicable	—	—	—	Not organic compounds
16 Corrosive to metals	Classification not possible	—	—	—	Test methods applicable to solid substances are not available

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 2	Skull and crossbones	Danger	Fatal if swallowed	Based on the testing data of rat LD50 (oral route) of 10mg/kg (CERI Hazard Data 2000-49, 2001).
1 Acute toxicity (dermal)	Classification not possible	—	—	—	No data available
1 Acute toxicity (inhalation: gas)	Not applicable	—	—	—	Due to the fact that the substance is "solid" according to the GHS definition and inhalation of its gas is not expected.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	—	—	—	No data available
1 Acute toxicity (inhalation: dust, mist)	Category 4	Exclamation mark	Warning	Harmful if inhaled	Based on the testing data of rat LC50 (4 hour inhalation exposure) of 4.29mg/L (IUCLID, 2000).
2 Skin corrosion / irritation	Classification not possible	—	—	—	No data available
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes severe eye irritation	Based on the evidence of "moderate irritation" from rabbit eye irritation tests (RTECS, 2004).
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) —	Respiratory sensitization: No data available Skin sensitization: No data available
5 Germ cell mutagenicity	Category 1B	Health hazard	Danger	May cause genetic defects	Based on positive data on heritable mutagenicity tests (dominant lethal tests), described in CIGAD 29 (2001).
6 Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer	Due to the fact that the substance is classified as Group 2B by IARC (2005, in preparation).
7 Toxic to reproduction	Category 2	Health hazard	Warning	May damage fertility or the unborn child	Based on the evidence of adverse effects on male fertility and foetal development at dosing levels toxic to parent animals, described in CIGAD 29 (2001) and NTP TR507 (2002).
8 Specific target organs/systemic toxicity following single exposure	Category 1 (respiratory organs, blood system, liver, kidneys)	Health hazard	Danger	Causes damage to organs (respiratory organs, blood systems, liver, kidneys)	Based on the human evidence including "severe upper respiratory irritation, upper respiratory damage, asthma, bloody phlegm, anemia, an increase in white blood cell counts, albuminuria, urinary casts, bloody urine and tremor" (CERI Hazard Data 2000-49, 2001) and the evidence from animal studies including "pulmonary edema" (CERI Hazard Data 2000-49, 2001) and "watery eyes, diarrhea, hepatocyte necrosis and swelling of renal tubules" (CIGAD 29, 2001). The substance was classified as Category 1 instead of Category 3 (Respiratory Irritation), based on the human evidence of "severe upper respiratory irritation". The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.
9 Specific target organs/systemic toxicity following repeated exposure	Category 1 (respiratory organs, blood system, nervous system, liver)	Health hazard	Danger	Causes damage to organs (respiratory organs, blood systems, nervous systems, liver) through prolonged or repeated exposure	Based on the human evidence including "cough, bronchitis, serious respiratory irritation, a few cases of abnormal hemoglobin levels (details not available), palpitation, debility and nervous asthenia" (CERI Hazard Data 2000-49, 2001) and the evidence from animal studies including "nasal hemorrhage, nasal secretion, focal pulmonary edema, fatty degeneration associated with focal necrosis of hepatocytes" (CERI Hazard Data 2000-49, 2001). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.
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)	Category 2	-	-	Toxic to aquatic life	It was classified into Category 2 from 48 hours LC50=1.45mg/L of the crustacea (Daphnia magna) (CERI Hazard Data, 2002).
11 Hazardous to the aquatic environment (chronic)	Category 2	Environment	-	Toxic to aquatic life with long lasting effects	Although acute toxicity was Category 2 and bio-accumulation was low (BCF=14 (Existing Chemical Safety Inspections Data)), since it was a metallic compound and the underwater action was unknown, it was classified into Category 2.