

GHS Classification

ID1132

Uranyl nitrate, hexahydrate

CAS 13520-83-7

Date Classified: Oct. 23, 2006 (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 | Classification not possible | - | - | - | Classification not possible due to lack of data and without UNRTDG Number, though the substance contains N-O bonds as chemical groups associated with explosive properties present and "A violent impact to the substance might cause an explosion with a spread of the shock wave." (Merck, 13th, 2001) |
| 2 Flammable gases | Not applicable | - | - | - | Solid (GHS definition) |
| 3 Flammable aerosols | Not applicable | - | - | - | Not aerosol products |
| 4 Oxidizing gases | Not applicable | - | - | - | Solid (GHS definition) |
| 5 Gases under pressure | Not applicable | - | - | - | Solid (GHS definition) |
| 6 Flammable liquids | Not applicable | - | - | - | Solid (GHS definition) |
| 7 Flammable solids | Not classified | - | - | - | HSDB (2005) has the statement as "almost nonflammable" and it was classified as out of Category. (However, it is considered to be an oxidant and the contact with combustibles should be avoided.) |
| 8 Self-reactive substances and mixtures | Not classified | - | - | - | Although the grouping relevant to explosive (N-O) was included, the grouping relevant to autoreactive was not included. And the information which indicates autoreactive was not found either, it was classified as the outside of Category. |
| 9 Pyrophoric liquids | Not applicable | - | - | - | Solid (GHS definition) |
| 10 Pyrophoric solids | Not classified | - | - | - | HSDB (2005) has a statement that it is "nonflammable" and it was defined as "out of Category". (However, it is considered to be an oxidized substance and contacting combustible materials should be avoided.) |
| 11 Self-heating substances and mixtures | Not classified | - | - | - | Not classified because of non-combustible (HSDB, 2005) |
| 12 Substances and mixtures, which in contact with water, emit flammable gases | Not classified | - | - | - | Stable to water (the water solubility is obtained) |
| 13 Oxidizing liquids | Not applicable | - | - | - | Solid (GHS definition) |
| 14 Oxidizing solids | Classification not possible | - | - | - | Since Sax (11th, 2004) describes that the anhydride of this product is a "powerful oxidizer and avoid contact with cellulose," the product is also considered as an oxidizing solid. But we cannot classify it because it does not have UNRTDG No. and is short of information which gives an indication of classification. |
| 15 Organic peroxides | Not applicable | - | - | - | Inorganic compound |
| 16 Corrosive to metals | Classification not possible | - | - | - | Test methods applicable to solid substances are not available. Its acidic solution is corrosive to metals (HSDB, 2005) |

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) | Classification not possible | - | - | - | No data available |
| 2 Skin corrosion / irritation | Classification not possible | - | - | - | No data available |
| 3 Serious eye damage / eye irritation | Classification not possible | - | - | - | No data available |
| 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 | Category 2 | Health hazard | Warning | Suspected of causing genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard) | Since the chromosomal abnormalities was acknowledged in the uranium compounds in peripheral lymphocyte of workers by which occupational exposure was carried out (PATTY (5th, 2001)), it was set as Category 2 according to classification guidelines. |
| 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 uranium and its soluble and insoluble compounds, it was categorized into A1(IARC78 (2001)) in ACGIH, and as radionuclide which deposited in the body, it was categorized into 1 in A1 (ACGIH (7th, 2001)). So it was classified into Category 1A. |
| 7 | Toxic to reproduction | Classification not possible | - | - | - | No data available |
| 8 | Specific target organs/systemic toxicity following single exposure | Category 1 (kidneys) | Health hazard | Danger | Cause damage to organs (kidneys) | The substance was classified as Category 1 (kidneys) because there is a report in Priority 1 of the effects on the kidneys, such as necrosis of the proximal convoluted tubules and collecting tubules, after exposure to the uranium compound in humans (ACGIH (7th, 2001)). |
| 9 | Specific target organs/systemic toxicity following repeated exposure | Category 1 (kidneys) | Health hazard | Danger | Causes damage to organs (kidneys) through prolonged or repeated exposure | Since there is description that the major target organ of the chronic toxicity in a uranium compound was the kidney (mainly proximal tubule) (in Priority 1,ACGIH (7th, 2001)), it was classified into Category 1 (kidney). |
| 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. |