

## GHS Classification

**ID456**

**CAS 16812-54-7**

**Nickel sulphide**

Date Classified: Jul. 24, 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	Not applicable	—	—	—	Containing no chemical 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	Classification not possible	—	—	—	No data available
8 Self-reactive substances and mixtures	Not applicable	—	—	—	Containing no chemical groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
10 Pyrophoric solids	Classification not possible	—	—	—	No data available
11 Self-heating substances and mixtures	Classification not possible	—	—	—	No data available
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	—	—	—	Stable to water (insoluble, Lide (84th, 2003)).
13 Oxidizing liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
14 Oxidizing solids	Not applicable	—	—	—	Inorganic compounds containing no oxygen and halogen
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)	Classification not possible	—	—	—	No data available
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)	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: Category 1 Skin sensitization: Category 1	(Respiratory sensitization) Health hazard  (Skin sensitization) Exclamation mark	(Respiratory sensitization) Danger  (Skin sensitization) Warning	(Respiratory sensitization) May cause allergy or asthma symptoms or breathing difficulties if inhaled  (Skin sensitization) May cause an allergic skin reaction	Respiratory sensitization: Due to the fact that the substance is classified as a Respiratory Sensitizing Substance by DFG (MAC/BAT (2005)) and "Respiratory Sensitizing Substance: Group 2" (as nickel compounds) according to the Recommendation on Occupational Exposure Limits for Chemical Substances (Japan Society for Occupational Health (2005)). Skin sensitization: Due to the fact that the substance is classified as a Skin Sensitizing Substance by DFG (MAC/BAT (2005)) and "Skin Sensitizing Substance: Group 1" (as nickel compounds) according to the Recommendation on Occupational Exposure Limits for Chemical Substances (Japan Society for Occupational Health (2005)).
5 Germ cell mutagenicity	Classification not possible	—	—	—	No data are available on in vivo mutagenicity/genotoxicity tests, whereas positive results were obtained in in vitro mutagenicity tests (two or more indices) (gene mutation and chromosome aberration), described in IARC 49 (1990), EHC 108 (1991) and ATSDR (2005). However, classification is not possible since these results are not considered reliable enough to serve as a basis for the classification into Category 2, given our understanding of toxicity of nickel (compounds). As for the mutagenicity/genotoxicity of insoluble inorganic nickel compounds, refer to "ID452, Nickel Oxide (II), CAS: 1313-99-1."
6 Carcinogenicity	Category 1A	Health hazard	Danger	May cause cancer	Due to the fact that the substance is classified as Category K by NTP (2005), Category A1 by ACGIH (2001) and Group 1 by IARC (1990).
7 Toxic to reproduction	Classification not possible	—	—	—	No data available
8 Specific target organs/systemic toxicity following single exposure	Classification not possible	—	—	Causes damage to organs (nervous system) (Narcotic effects) May cause drowsiness or dizziness	No data available The acute toxicity of nickel compounds manifests in humans as "nausea, diarrhea, dizziness, headache" (ECETOC TR33 (1989)).

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (respiratory organs)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (nervous system)	Based on the evidence from animal studies including "active pulmonary inflammation (or pneumonia)" (ATSDR 2005). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1. Chronic exposure to nickel and its compounds may produce respiratory irritation and degeneration in humans even at doses close to occupational exposure limits. Prolonged exposure to high concentrations is likely to result in the fibroid lung (ECETOC TR33 (1989)).
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