GHS Classification

ID884 Propane, 1-nitro-

CAS 108-03-2 Date Classified: May 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 classified	–	–	–	UNRTDG Class: 3
2	Flammable gases	Not applicable	–	–	–	Liquid (GHS definition)
3	Flammable aerosols	Not applicable	–	–	–	Not aerosol products
4	Oxidizing gases	Not applicable	–	–	–	Liquid (GHS definition)
5	Gases under pressure	Not applicable	–	–	–	Liquid (GHS definition)
6	Flammable liquids	Category 3	Flame	Warning	Flammable liquid and vapour	Flash point: >=23degC and <=60degC, UNRTDG Class: 3, PGIII
7	Flammable solids	Not applicable	–	–	–	Liquid (GHS definition)
8	Self-reactive substances and mixtures	Not classified	–	–	–	Classified in UNRTDG Class: 3
9	Pyrophoric liquids	Not classified	–	–	–	Flash point: 420degC (Hommel, 1991 Card No.298)
10	Pyrophoric solids	Not applicable	–	–	–	Liquid (GHS definition)
11	Self-heating substances and mixtures	Classification not possible	–	–	–	Test methods applicable to liquid substances are not available
12	Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	–	–	–	The chemical structure of the substance does not contain metals or metaloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At).
13	Oxidizing liquids	Not classified	–	–	–	UNRTDG Class: 3
14	Oxidizing solids	Not applicable	–	–	–	Liquid (GHS definition)
15	Organic peroxides	Not applicable	–	–	–	Containing no -O-O- structure
16	Corrosive to metals	Not classified	–	–	–	UNRTDG Class: 3

Health Hazards

	Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1	Acute toxicity (oral)	Category 4	Exclamation mark	Warning	Harmful if swallowed	SPECIES: Rat ENDPOINT: LD50 VALUE: 455 mg/kg REFERENCE SOURCE: RTECS (2005), HSDB (2005) SPECIES: Rat ENDPOINT: LD50 VALUE: 484 mg/kg REFERENCE SOURCE: IUCLID (2000)
1	Acute toxicity (dermal)	Not classified	–	–	–	Based on rabbits lethal dose: >2000mg/kg (RTECS, 2005) and rabbit LD50 value: >2000mg/kg (IUCLID, 2000), it was set as the outside of Category.
1	Acute toxicity (inhalation: gas)	Not applicable	–	–	–	Liquid (GHS definition)
1	Acute toxicity (inhalation: vapour)	Category 3	Skull and crossbones	Danger	Toxic if inhaled	Based on rat LC50 (1 hour) value: 11.02 mg/L (4 hour equivalent: 5.51mg/L, 1514ppm), it was classified . Since 5.51 mg/L was judged to be steam with almost no mist from vapor pressure, it was classified according to the ppm concentration standard. it was classified as Category 3.
1	Acute toxicity (inhalation: dust, mist)	Classification not possible	–	–	–	No data available
2	Skin corrosion / irritation	Classification not possible	–	–	–	IUCLID (2000) had description that skin irritation was not admitted by the test which used the rabbit. But there was description that the skin might be stimulated (HSFS (2002), SITTIG (4th, 2002)). So it could not be classified since data was insufficient.
3	Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	There is the description that in humans eye irritations were acknowledged by exposure to vapor (ACGIH (7th, 2001), PATTY (4th, 1994), and DFGOT (vol.13, 1999)), and the description that the eyes are stimulated seriously (ICSC (J) and (1996)). So it was set as Category 2A-2B.
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not	–	–	–	Respiratory organ: No data. Skin: Although there was description that skin sensitization was not acknowledged in IUCLID (2000) with the guinea pigs, we had no description which clearly negates sensitizing property in Proprity 1, therefore we presupposed that we could not classify it.

5	Germ cell mutagenicity	Not classified	–	–	–	Since there was a negative result with the micronucleus test on rat and mouse red corpuscles which is an in vivo mutagenicity test using somatic cells (PATTY 4th, 1994), it was classified as out of Category.
6	Carcinogenicity	Not classified	–	–	–	Not classified because of "A4" (ACGIH, 7th, 2001)
7	Toxic to reproduction	Classification not possible	–	–	–	No data available
8	Specific target organs/systemic toxicity following single exposure	Category 3 (respiratory tract irritation, narcotic effects)	Exclamation mark	Warning	May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation, narcotic effects)	Since the symptom, which is considered to be respiratory irritant and anesthetic actions, was seen in the inhalation exposure test using the rabbits as described in ACGIH (7th, 2001), it was set as Category 3 (respiratory irritant, anesthetic actions).
9	Specific target organs/systemic toxicity following repeated exposure	Not classified	–	–	–	Based on the description that in the 21.5-months inhalation exposure test using the rat, the toxicity which endorses the classification of the concentration exceeding the Category 2 guidance value range is not observed (ACGIH (7th, 2001) and PATTY (4th, 1994)), and in the 28-days oral study (good laboratory practice tests) using the rat, the toxicity is not acknowledged with the dosage in the the Category 2 guidance value range (IUCLID (2000)), it was classified into the outside of Category.
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 3	–	–	Harmful to aquatic life	It was classified into Category 3 from 96-hour ErC50=20mg/L of algae (Selenastrum) (IUCLID, 2000).
11	Hazardous to the aquatic environment (chronic)	Category 3	–	–	Harmful to aquatic life with long lasting effects	Classified into Category 3, since acute toxicity was Category 3 and not rapidly degrading (BOD of 2-nitro propane: 8% (existing chemical safety inspections data)), though less bio-accumulative (log Kow=0.87(PHYSPROP Database, 2005)).