GHS Classification

ID335 2,2'-Azobisisobutyronitrile

CAS 78-67-1 Date Classified: Apr. 20, 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	-	-	-	The substance contains chemical groups associated with explosive properties that contain nitrogen but lack oxygen. The decomposition heat is 1.3kJ/g (Bretherick (J) (5th, 1998)), while SADT stands at 50degC (Studies in Disasters (2002)). These data are not excluded from "explosives," but classification is not possible because of the absence of data. Classified into Division 4.1 (UN#3234) (UN Recommendations on the Transport of Dangerous Goods)
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	Type C	Flame	Danger	Heating may cause a fire	Not classified as explosives and "Not applicable" as oxidative solids and organic peroxides; the decomposition heat is 1.3kJ/g (Bretherick (J) (5th, 1998)), while SADT stands at 50degC (Studies in Disasters (2002)) - which correspond to "self-reactive substances." With no data available for classification, the substance is classified into "Type C," according to the classification by UN Recommendations on the Transport of Dangerous Goods: Self-reactive Substance C (Solid) (Thermal Control Required), Class (Category 4.1 Container: No Grade (UN#3234).
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	-	-	-	Test methods applicable to liquid substances are not available - melting point: 105degC (HSDB, 2005), test temperature: 140degC
12	Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	-	-	-	Containing no metals or metalloids (B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At)
13	Oxidizing liquids	Not applicable	-	-	-	Classified as "solid" according to GHS definition
14	Oxidizing solids	Not applicable	-	-	-	Organic compounds containing no oxygen, fluorine and chlorine
15	Organic peroxides	Not applicable	-	-	-	Organic compounds containing no "-O-O-" structure
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 3	Skull and crossbones	Danger	Toxic if swallowed	Based on the rat LD50 (oral route) of 100mg/kg (SIDS (2002)).
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:	Classification not possible	-	-	-	Insufficient data available
1	Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	Insufficient data available
2	Skin corrosion / irritation	Not classified	-	-	-	Based on the testing data of rabbit skin irritation tests according to OECD Test Guideline 404 (SIDS (2002)), and negative results in human health effects (SIDS (2002)).
3	Serious eye damage / eye irritation	Classification not possible	-	-	-	Insufficient data available, though negative results were observed in rabbit eye irritation tests (SIDS (2002)).
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible Skin sensitization: Classification not possible	-	-	-	Respiratory sensitization: No data available Skin sensitization: Insufficient data available, though negative results were observed in animal studies (SIDS (2002)) and human health effects (SIDS (2002)).
5	Germ cell mutagenicity	Not classified	-	-	-	Based on the absence of data on multi-generation mutagenicity tests and germ cell mutagenicity tests in vivo and negative data on somatic cell mutagenicity tests in vivo, described in CERI Hazard Data 2001-45 (2002).
6	Carcinogenicity	Classification not possible	-	-	-	No data available
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the description in CERI Hazard Data 2001-45 (2002): Abnormalities in nursing behavior and the death of newborns are observed at dosing levels toxic to dams.
8	Specific target organs/systemic toxicity following single exposure	Classification not possible	-	-	-	Insufficient data available
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (liver)	Health hazard	Warning	May cause damage to organs through prolonged or repeated exposure (liver)	Based on the evidence from animal studies including "hypertrophy of centrilobular hepatocytes (the Ministry of Health, Labour and Welfare (1997)). The effects on the liver of experimental animals were observed at dosing levels within the guidance value ranges for Category 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)	Not classified	–	–	–	According to 72 hours ErC50>7.8mg/L of the algae (Selenastrum) (MOE Eco-Toxicity Tests of Chemicals (1996)), since the toxicity is not indicated within the upper level concentrations of auxiliary agents, it was classified into Not classified.
11	Hazardous to the aquatic environment (chronic)	Not classified	–	–	–	Although it is water-insolubility and acute toxicity was not reported within the upper level concentrations of the auxiliary agents and there was no rapidly degrading (the decomposition by BOD: 0%(Existing Chemical Safety Inspections Data), since the bio-accumulation (log Kow=1.1 (PHYSPROP Database (2005))) was low, it was classified into Not classified.