

GHS Classification

ID342

CAS 27636-75-5

Physical Hazards

Sodium undecylbenzenesulfonate (C11)

Date Classified: Oct. 23, 2006 (Environmental Hazards: Mar. 31, 2006)

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 "liquid" or "solid" according to GHS definition
3 Flammable aerosols	Not applicable	—	—	—	Not aerosol products
4 Oxidizing gases	Not applicable	—	—	—	Classified as "liquid" or "solid" according to GHS definition
5 Gases under pressure	Not applicable	—	—	—	Classified as "liquid" or "solid" according to GHS definition
6 Flammable liquids	Classification not possible (liquid)	—	—	—	No data available
7 Flammable solids	Classification not possible (solid)	—	—	—	No data available
8 Self-reactive substances and mixtures	Classification not possible	—	—	—	Classification not possible due to lack of data, though being sulfonyls, containing chemical groups with self-reactive properties
9 Pyrophoric liquids	Not classified (liquid)	—	—	—	Considered non-pyrophoric when in contact with air at ordinary temperatures since the substance is used as laundry detergents (CER1-NITE Hazard Assessment, 2006), and sodium dodecylbenzenesulphonate (C12), which is an analog, is classified as non-flammable (ICSC, 1999).
10 Pyrophoric solids	Not classified (solid)	—	—	—	Considered non-pyrophoric when in contact with air at ordinary temperatures since the substance is used as laundry detergents (CER1-NITE Hazard Assessment, 2006), and sodium dodecylbenzenesulphonate (C12), which is an analog, is classified as non-flammable (ICSC, 1999).
11 Self-heating substances and mixtures	Classification not possible	—	—	—	As for a liquid or solid with melting point of <140degC, classification is not possible since test methods applicable to liquid substances are not available (test temperature: 140degC), whereas for those with melting point of >140degC, classification is not possible due to lack of data. However, the substance can be non-flammable and thus "Not classified" since sodium dodecylbenzenesulphonate (C12), which is an analog, is classified as non-flammable (ICSC, 1999).
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	—	—	—	Stable to water (used as laundry detergents (CER1-NITE Hazard Assessment, 2006))
13 Oxidizing liquids	Classification not possible (liquid)	—	—	—	Classification not possible due to lack of data, though being organic compounds containing oxygen bound to elements other than carbon and hydrogen
14 Oxidizing solids	Classification not possible (as a solid)	—	—	—	Classification not possible due to lack of data, though being organic compounds containing oxygen bound to elements other than carbon and hydrogen
15 Organic peroxides	Not applicable	—	—	—	Organic compounds containing no "-O-O-" structure
16 Corrosive to metals	Classification not possible	—	—	—	As for those with melting point of >55degC, classification is not possible since test methods applicable to solid substances are not available, whereas for those with melting point of <55degC, classification is not possible due to lack of data. However, the substance can be included in "Not classified" because it is widely used as laundry detergents (CER1-NITE Hazard Assessment, 2006).

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	Based on the rat LD50 (oral route) value of 1,460mg/kg representing the lower of the two testing data, 1,460mg/kg (males) and 1,470mg/kg (females) (CER1-NITE Hazard Assessment No.5 (2005)) (LAS-Na mixtures with carbon chain lengths of 10-14; no data available on sodium undecylbenzenesulfonate per se).
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 "liquid" or "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	Category 2	Exclamation mark	Warning	Causes skin irritation	Based on the description in the report on human epidemiological studies (CER1-NITE Hazard Assessment No.5 (2005)): "24 hour application of 1% aqueous solution of LAS induced moderate irritation." The substance is thus considered a moderate irritant (LAS mixtures with carbon chain lengths of 10-14; no data available on sodium undecylbenzenesulfonate per se).
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	Based on the description in the report on rabbit eye irritation tests (CER1-NITE Hazard Assessment No.5 (2005)): "Application of 5% solution produced severe congestion and edema." The substance is thus considered a severe irritant (LAS mixtures with carbon chain lengths of 11-13; no data available on sodium undecylbenzenesulfonate per se).
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible Skin sensitization: Category 1	(Respiratory sensitization) — (Skin sensitization) Exclamation mark	(Respiratory sensitization) — (Skin sensitization) Warning	(Respiratory sensitization) — (Skin sensitization) May cause an allergic skin reaction	Respiratory sensitization: No data available Skin sensitization: Based on the description in the report on guinea pig skin sensitization tests (CER1 Hazard Data 2001-20 (2002) and CER1-NITE Hazard Assessment No.5 (2004)): "Skin sensitization: positive" (linear alkylbenzenesulfonate and its salts (the carbon chain length unknown); No data available on sodium undecylbenzenesulfonate per se).
5 Germ cell mutagenicity	Classification not possible	—	—	—	Classification not possible due to the insufficiency of data (no definite data are available regarding sodium undecylbenzenesulfonate per se). As for linear alkylbenzene sulphonate (LAS) and its salts [carbon chain lengths of 10-14 and their mixtures], no data are available on germ cell mutagenicity tests in vivo, whereas multi-generation mutagenicity tests (dominant lethal tests), somatic cell mutagenicity tests in vivo (micronucleus tests, chromosome aberration tests) and Ames assay gave negative results, described in NTP DB (Access on June, 2006), CER1-NITE Hazard Assessment No.5 (2005) and EHC 169 (1996).

6	Carcinogenicity	Classification not possible	—	—	—	Classification not possible based on expert judgment in the absence of existing classification together with the absence of definite data on sodium undecylbenzenesulfonate per se. CERI-NITE Hazard Assessment No.5 (2005) presents some data regarding carcinogenicity studies on linear alkylbenzene sulphonate (LAS) and its salts [carbon chain lengths of 10-14 and their mixtures].
7	Toxic to reproduction	Classification not possible	—	—	—	Classification not possible due to the insufficiency of data (no definite data are available regarding sodium undecylbenzenesulfonate per se). As for linear alkylbenzene sulphonate (LAS) and its salts [carbon chain lengths of 10-14 and their mixtures], there was no evidence of adverse effects on the parental animals and the offspring observed in oral studies, whereas decreased fertility and increased incidence of malformation in the offspring were observed at doses inducing parental toxicity in dermal studies, described in CERI-NITE Hazard Assessment No.5 (2005) and EHC 169
8	Specific target organs/systemic toxicity following single exposure	Classification not possible	—	—	—	Classification not possible in the absence of data on sodium undecylbenzenesulfonate per se. Note: As for linear alkylbenzene sulphonate (LAS) and its salts [carbon chain lengths of 10-14 and their mixtures], "clinical symptoms include confusion, vomiting, pharyngeal and oral pains, and the tendency of blood pressure to decrease" (NITE Initial Risk Assessment No.5 (2005)).
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	—	—	—	Classification not possible due to the fact that the only available data are those for mixtures of C10-14.
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=1.15mg/L of the crustacea (Daphnia magna) (EHC169, 1996).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since there was rapidly degrading (the decomposition of p-n-dodecylbenzenesulfonic acid sodium salt by BOD: 73% (Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (log Kow=2.51(PHYSROP Database, 2005)), it was classified into Not classified.