

## GHS Classification

**ID492**

**Poly(oxyethylene) alkyl ether (alkyl C=12-15)**

**CAS**

Date Classified: Nov. 20, 2006 (Environmental Hazards: Jan. 25, 2007)

### 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 "liquid" according to GHS definition (poly(oxyethylene)dodecyl ether, when 10 moles of ethylene oxide added (EO10)).
3 Flammable aerosols	Not applicable	—	—	—	Not aerosol products
4 Oxidizing gases	Not applicable	—	—	—	Classified as "liquid" according to GHS definition (poly(oxyethylene)dodecyl ether, when 10 moles of ethylene oxide added (EO10)).
5 Gases under pressure	Not applicable	—	—	—	Classified as "liquid" according to GHS definition (poly(oxyethylene)dodecyl ether, when 10 moles of ethylene oxide added (EO10)).
6 Flammable liquids	Not classified (poly(oxyethylene) dodecyl ether.)	—	—	—	The flash point is >93degC (c.c.) (NFPA (2002)) (poly(oxyethylene)dodecyl ether (the number of ethylene oxide units unknown)).
7 Flammable solids	Not applicable	—	—	—	Classified as "liquid" according to GHS definition (poly(oxyethylene)dodecyl ether, when 10 moles of ethylene oxide added (EO10)).
8 Self-reactive substances and mixtures	Not applicable	—	—	—	Containing no chemical groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not classified	—	—	—	Considered non-pyrophoric when in contact with air at ordinary temperatures since the substance is used as laundry detergents (CERI-NITE Hazard Assessment (2006))
10 Pyrophoric solids	Not applicable	—	—	—	Classified as "liquid" according to GHS definition (poly(oxyethylene)dodecyl ether, when 10 moles of ethylene oxide added (EO10)).
11 Self-heating substances and mixtures	Classification not possible	—	—	—	Test method applicable to liquid substances are not available (solidification point: 16degC (poly(oxyethylene)dodecyl ether, when 10 moles of ethylene oxide added, HSDB (2006)), 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	—	—	—	Organic compounds containing oxygen (but not fluorine and chlorine), with oxygen bound to carbon and hydrogen (but not to other elements)
14 Oxidizing solids	Not applicable	—	—	—	Classified as "liquid" according to GHS definition (poly(oxyethylene)dodecyl ether, when 10 moles of ethylene oxide added (EO10)).
15 Organic peroxides	Not applicable	—	—	—	Organic compounds containing no "-O-O-" structure
16 Corrosive to metals	Classification not possible	—	—	—	No data available

### 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 544mg/kg representing the lower of the two testing data, 544mg/kg (alkyl C14-15, EO11) and 9,800mg/kg (alkyl C10,12,14, EO2-7) (CERI-NITE Hazard Assessment No.89 (2005)).
1 Acute toxicity (dermal)	Category 4	Exclamation mark	Warning	Harmful in contact with skin	Based on the rabbit LD50 (dermal route) value of 2,000mg/kg representing the lower of the two testing data, 2,000mg/kg (alkyl C12-13, EO6) and 5,000mg/kg (alkyl C14-15, EO13) (CERI-NITE Hazard Assessment No.89 (2005)).
1 Acute toxicity (inhalation: gas)	Not applicable	—	—	—	Due to the fact that the substance is a liquid according to the GHS criteria 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)	Category 4	Exclamation mark	Warning	Harmful if inhaled	Based on the rat LC50 (inhalation route) value of 1.5mg/L (alkyl C12-13, EO6) (4 hours).
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	Based on the description in the report on rabbit skin irritation tests (CERI-NITE Hazard Assessment No.89 (2005)): "Two undiluted test materials with different chain lengths (Alkyl C12-13, EO6; C14-15, EO7) produced severe irritation when applied neat. The reactions persisted for at least 35 days." Both materials are "very strongly irritating, with effects not resolving within 21 days," and thus considered to be "irreversible."
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the description in the report on rabbit eye irritation tests (CERI-NITE Hazard Assessment No.89 (2005)): "Two test materials with different chain lengths (Alkyl C12-13, EO6; C14-15, EO7) produced severe irritation when applied neat. The reactions persisted for at least 35 days." Both materials are "very strongly irritating, with effects not resolving within 21 days," and thus considered to be "irreversible."

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) —	Respiratory sensitization: No data available Skin sensitization: Insufficient data available
5	Germ cell mutagenicity	Not classified	—	—	—	Based on the absence of data on multi-generation mutagenicity tests and in vivo germ cell mutagenicity tests, and negative data in in vivo somatic cell mutagenicity tests (chromosome aberration tests and micronucleus tests), described in CER/NITE Hazard Assessment No.89 (2005).
6	Carcinogenicity	Classification not possible	—	—	—	Classification not possible based on a judgment made by experts in the absence of existing classification, though CER/NITE Hazard Assessment No.89 (2005) presents some toxicity data.
7	Toxic to reproduction	Not classified	—	—	—	Based on no evidence of reproductive effects observed in rat reproductive toxicity studies and teratogenicity studies, described in CER/NITE Hazard Assessment No.89 (2005).
8	Specific target organs/systemic toxicity following single exposure	Category 3 (narcotic effects)	Exclamation mark	Warning	(Narcotic effects) May cause drowsiness or dizziness	Based on the evidence from animal studies including "somnolency, increased mobility," and "ataxia" (RTECS 2006).
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	—	—	—	Insufficient data available
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 1(C14AE1, C14-15AE7) Category 2(C12-15AE12)	Environment(C14AE1, C14-15AE7) -(C12-15AE12)	Warning(C14AE1, C14-15AE7) -(C12-15AE12)	Very toxic to aquatic life(C14AE1, C14-15AE7) -(C12-15AE12)	C14AE1: It was classified into Category 1 from 48 hours EC50=0.14mg/L of the crustacea (Daphnia magna) (CER/NITE Hazard Assessment Report (2005)). C14-15AE7: It was classified into Category 1 from 48 hours LC50=0.62mg/L of the crustacea (Daphnia magna) (CER/NITE Hazard Assessment Report (2005)). C12-15AE12: It was classified into Category 2 from 48 hours EC50=1.4mg/L of the crustacea (Daphnia magna) (CER/NITE Hazard Assessment Report (2005)). [NOTE] Since the toxicity of polyoxyethylene alkyl ether increases as ethylene oxide chain length decreases, it pointed to the category of several ethylene oxide chain length. In addition, polyoxyethylene alkyl ether described as CmEn (m: alkyl carbon numbers, n: mole numbers of added ethylene oxide).
11 Hazardous to the aquatic environment (chronic)	Category 1(C14-15AE7) Classification not possible(C14AE1, C12-15AE12)	Environment(C14-15AE7) -(C14AE1, C12-15AE12)	Warning(C14-15AE7) -(C14AE1, C12-15AE12)	Very toxic to aquatic life with long lasting effects(C14-15AE7) -(C14AE1, C12-15AE12)	C14-15AE7: Although the acute toxicity was Category 1 and it had potential to rapidly degrade (the decomposition by BOD(C12AE40): 74% (CER/NITE Hazard Assessment Report (2005))), since it had potential to bioaccumulate (BCF=700-800(C14AE7) (CER/NITE Hazard Assessment Report (2005))), it was classified into Category 1. C14AE1, C12-15AE12: Although it had potential to rapidly degrade (the decomposition by BOD(C12AE40): 74% (CER/NITE Hazard Assessment Report (2005))), since there was no data about bioaccumulation of each component (as the bioaccumulation depends on alkyl carbon numbers and mole numbers of added ethylene oxide), classification is not possible. [NOTE] Since the toxicity of polyoxyethylene alkyl ether increases as ethylene oxide chain length decreases, it pointed to the category of several ethylene oxide chain length. In addition, polyoxyethylene alkyl ether described as CmEn (m: alkyl carbon numbers, n: mole numbers of added ethylene oxide).