

## GHS Classification

**ID333**

**CAS 2439-35-2**

### Physical Hazards

## 2-(Dimethylamino)ethyl acrylate

Date Classified: Apr. 20, 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" according to GHS definition
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
5 Gases under pressure	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
6 Flammable liquids	Classification not possible	-	-	-	No data available. The flash point of some products on the market is 63degC (e.c.) (14102 chemical product), which can be classified into Category 4
7 Flammable solids	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
8 Self-reactive substances and mixtures	Not classified	-	-	-	No data available, though containing unsaturated bonds. Classified into Division 6.1 (UN#3302) (UN Recommendations on the Transport of Dangerous Goods)
9 Pyrophoric liquids	Not classified	-	-	-	Classified into Division 6.1 (UN#3302) (UN Recommendations on the Transport of Dangerous Goods)
10 Pyrophoric solids	Not applicable	-	-	-	Classified as "liquid" according to 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	-	-	-	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 the oxygen bound to carbon and hydrogen (but not to other elements)
14 Oxidizing solids	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
15 Organic peroxides	Not applicable	-	-	-	Organic compounds containing no "-O-O-" structure
16 Corrosive to metals	Not classified	-	-	-	Classified into Division 6.1 (UN#3302) (UN Recommendations on the Transport of Dangerous Goods)

### 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 455mg/kg representing the lowest fixed value of the testing data, 455mg/kg, 1,200-1,500mg/kg, 215-681mg/kg, and 533mg/kg (SIDS (2003)).
1 Acute toxicity (dermal)	Category 3	Skull and crossbones	Danger	Toxic in contact with skin	Based on the rat LD50 (dermal route) value of 419mg/kg representing the lower value of two testing data, 419mg/kg and 891mg/kg (SIDS (2003)).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Due to the fact that the substance is "liquid" according to the GHS definition and inhalation of its gas is not expected.
1 Acute toxicity (inhalation: vapour)	Category 1	Skull and crossbones	Danger	Fatal if inhaled	Based on the LC50 value (4 hours) of 11ppm, calculated from the testing data of rat LC50 (inhalation of vapour) of 0.066mg/L (SIDS (2003)), 0.972mg/L (1 hour) (SIDS (2003)), 0.22mg/L (4 hours) (SIDS (2003)), was lower than 90% of the saturated vapour concentration (670ppm) under a saturated vapour pressure of 68Pa (20degC) (IUCLD (2000)), the substance was considered as "vapour containing substantially no mist" and was classified based on standard values expressed in ppm.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	Based on the evidence of skin corrosivity from the rabbit primary skin irritation tests (three reports in SIDS (2003)) and lack of data for subclassification, although the substance should be placed in Category 1A from the viewpoint of safety.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Two reports are available on rabbit primary conjunctiva irritation tests (SIDS (2003)), the results of which serve as a basis for classification into Category 2 (Severely Irritating) and Category 1 (Corrosive). However, the test conditions are not specified.
4 Respiratory/skin sensitization	respiratory sensitization: Classification not possible Skin sensitization: Category 1	Exclamation mark	Warning	May cause allergic skin reaction	Respiratory sensitization: No data available Skin sensitization: Based on the positive results of guinea pig skin sensitization tests based on the modified Magnusson and Kligman Maximization method, described in SIDS (2003).
5 Germ cell mutagenicity	Not classified	-	-	-	Based on the absence of positive 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 CERH Hazard Data 2001-27 (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 SIDS (2003): Malformations are observed in the embryo, none of which can be indirectly attributed to maternal toxicity.
8 Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system, respiratory organs)	Health hazard	Danger	Causes damage to organs (central nervous system, respiratory organs)	Based on the evidence from animal studies including "restlessness, sedation, piloerection, tremor, coma, gasping respiration, hyperpnea, dyspnea, rhonchus" (CERH Hazard Data 2001-27 (2002)), "a decrease in mobility, sedation, piloerection, dyspnea, tonic clonic spasm, pulmonary edema (observed primarily in dying specimens)" (SIDS (2003)). The effects were observed at dosing levels within the guidance value ranges for Category 1.
9 Specific target organs/systemic toxicity following repeated exposure	Classification not possible	-	-	-	Insufficient data available

10	Aspiration hazard	Category 2	Health hazard	Warning	May be harmful if swallowed and enters airways	Based on the evidence from animal studies including "alveolar hemorrhage (due probably to irritation caused by the reflux of the orally administered substance), pulmonary edema/congestion, fatal cases" (SIDS (2003)). The kinematic viscosity stands at 1.31mm <sup>2</sup> /s (25degC) (CERI calculated value (2005)).
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### Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11 Hazardous to the aquatic environment (acute)	Category 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 72 hours ErC50=0.88mg/L of the algae (Scenedesmus) (SIDS, 2004).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since there was rapidly degrading (it was hydrolyzed to acrylic acid (the decomposition by BOD: 67.8%) and to N,N-dimethylethanolamine (the decomposition by BOD: 60.5%) (Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (log Kow=0.42 (PHYSPROP Database (2005))), it was classified into Not classified.