

## GHS Classification

**ID783**

**Dicyclopentadiene**

**CAS 77-73-6**

Date Classified: Jul. 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 applicable	-	-	-	There are no chemical groups associated with explosive properties present in the molecules.
2 Flammable gases	Not applicable	-	-	-	Solid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Solid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Solid (GHS definition)
6 Flammable liquids	Category 3 (industrial products)	Flame	Warning	Flammable liquid and vapour	Category 1 because of its flash point: :23degC - 60degC
7 Flammable solids	Category 1	Flame	Danger	Flammable solid	Flash point: 32degC
8 Self-reactive substances and mixtures	Not applicable	-	-	-	There are no chemical groups associated with explosive or self-reactive properties present in the molecule.
9 Pyrophoric liquids	Not classified (industrial products)	-	-	-	There is information that the ignition points is 503 degC, and it can be considered that it does not ignite in room temperatures.
10 Pyrophoric solids	Not classified	-	-	-	Flash point: 503degC and considered as a non-pyrophoric substance at a room temperature.
11 Self-heating substances and mixtures	Classification not possible	-	-	-	It is 33 degC of melting points, and since it liquefies in test conditions of the provision, it cannot examine.
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 metalloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At).
13 Oxidizing liquids	Not applicable (industrial products)	-	-	-	Organic compounds containing no oxygen, fluorine and chlorine.
14 Oxidizing solids	Not applicable	-	-	-	Containing no oxygen , chlorine and fluorine.
15 Organic peroxides	Not applicable	-	-	-	Containing no -O-O- structure
16 Corrosive to metals	Not classified	-	-	-	Non-corrosive to metals (HSDB, 2005)

## 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	The statistical calculation of 5 data (ECETOC JACC 19 (1991)) distributed from 346.5 to 590 mg/kg as rat oral LD50 was done and the mean value of 373.6mg/kg was obtained. So it was set as Category 4.
1 Acute toxicity (dermal)	Category 5	-	Warning	May be harmful in contact with skin	Although three data (ECETOC JACC 19 (1991)) distributed 4380 - 6600 mg/kg was found out as rabbit dermal LD50, it was set as "Category 5" from the lowest data of 4380mg/kg.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Solid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	Since the mean of 422ppm (2.28mg/L) was obtained with the statistical work of the four data for rat inhalation LC50 distributed 372 - 660ppm (ECETOC JACC 19 (1991)), it was classified as Category 2.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	Classification not possible due to lack of data
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	It was classified as "Category 2" since it was Moderate in the application test on rabbit skin (ECETOC JACC 19 (1991)).
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	The result of the dose experiment to the eyes of a rabbit was mild (ECETOC JACC 19 (1991)). But R36 is applied in EU. Since SIDS (1998) was also set to irritant to eyes, it was set as "Category 2B."
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Not possible	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	About respiratory sensitization, there was no information and we could not classify it. About skin sensitization, there were two experiment results with guinea pigs, both of which were negative (Source: DFGOT vol.6 (1993) and ECETOC JACC 19 (1991)), so we classified them to be "Out Of Category."
5 Germ cell mutagenicity	Classification not possible	-	-	-	Since there were no in vivo experimental results, we could not classify it. There were five in vitro experiment reports and all of them were negative.
6 Carcinogenicity	Classification not possible	-	-	-	Since there is no judgment of classification organizations, it cannot be classified. In two caces of rat test reporting, it is judged with negativity (DFGOT vol.6 (1993), ECETOC JACC 19 (1991)).
7 Toxic to reproduction	Not classified	-	-	-	It was considered as "out of category" since it had no influence in the feeding administration experiments to pregnant female (ECETOC JACC 19 (1991)), the intragastric administration experiment to the male and female including delivery periods (Ministry of Health and Welfare reports (2006)), and a three generation feeding administration experiments (ECETOC JACC 19 (1991)).

8	Specific target organs/systemic toxicity following single exposure	Category 1 (respiratory, liver, kidneys); Category 3 (narcotic effects)	Health hazard; Exclamation mark	Danger; Warning	Cause damage to organs (respiratory, liver, kidneys); May cause respiratory irritation or may cause drowsiness and dizziness (narcotic effects)	There are the effects on the respiratory systems, kidney, liver and paralysis of the extremities are reported by rat inhalation exposure equivalent to the guidance value of Category 1. And anesthesia conditions is regarded by oral treatment to mink (DFGOT vol.6 (1993)). So it is classified into "Category 1 (the respiratory system, liver, kidney), Category 3 (anesthetic actions)".
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (kidneys); Category 2 (circulatory system, liver, lung)	Health hazard	Danger; Warning	Causes damage to organs (kidneys) through prolonged or repeated exposure; May cause damage to organs (circulatory system, liver, lung) through prolonged or repeated	In rat inhalation exposure test, the influence on the kidney within the guidance value of Category 1 is reported (ECETOC JACC 19 (1991)), and the influence on lungs is further reported within the guidance value of Category 2 (ACGIH (2001)). Moreover, in the rat oral administration within the guidance value of Category 2, since the influence to the circulatory organ and liver (Ministry of Health and Welfare reports (2006)) was observed, it was classified into "Category 1 (kidney), Category 2 (cardiovascular,liver,lung)."
10	Aspiration hazard	Category 1	Health hazard	Danger	May be fatal if swallowed and enters airways	Although it is a polycyclic hydrocarbon corresponded by dynamic viscosity, the industrial products contain monocyclic substance (cyclopentadiene) a lot. We classified it as "Category 1."

### 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 96-hour LC50=4.3mg/L of fishes ( <i>Oryzias latipes</i> ) (SIDS, 2002).
11 Hazardous to the aquatic environment (chronic)	Category 2	Environment	-	Toxic to aquatic life with long lasting effects	Classified into Category 2, since acute toxicity was Category 2 and not rapidly degrading (BOD: 0% (existing chemical safety inspections data)), though less bio-accumulative (BCF=384 (existing chemical safety inspections data)).