

## GHS Classification

**ID180**

**Oxirane, phenyl-**

**CAS 96-09-3**

Date Classified: Aug. 18, 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	-	-	-	Liquid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Liquid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Liquid (GHS definition)
6 Flammable liquids	Category 4	-	Warning	Combustible liquid	Flash point: >60degC and <=93degC
7 Flammable solids	Not applicable	-	-	-	Liquid (GHS definition)
8 Self-reactive substances and mixtures	Classification not possible	-	-	-	No data available
9 Pyrophoric liquids	Not classified	-	-	-	The ignition points is 435 degC. (Hommmel (1991) Card No.568)
10 Pyrophoric solids	Not applicable	-	-	-	Liquid (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	-	-	-	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	-	-	-	Organic compounds containing oxygen (but not chlorine and fluorine) chemically bonded only to carbon and hydrogen (but not to other elements).
14 Oxidizing solids	Not applicable	-	-	-	Liquid (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	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 rat LD50 value: 2000 to 4290 mg/kg (CERI Hazard Data, 2002), the lowest value was adopted and it was set as Category 4.
1 Acute toxicity (dermal)	Category 3	Skull and crossbones	Danger	Toxic in contact with skin	Based on rat LD50 value: 930mg/kg (CERI Hazard Data, 2002), rabbit LD50 value: 930-1184mg/kg (CERI Hazard Data, 2002), and 2830mg/kg (PATTY 4th, 1994), the lowest value was adopted and it was set as Category 3.
1 Acute toxicity (inhalation: gas)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	It may be Category 2 from the description, but LC50 value is not indicated. So it cannot be classified. The description of PATTY (4th, 1994) is that 3 of 6 rats died with 395ppm (saturated vapor concentration) of 4-hour exposure (equivalent of 1.94mg/L) and that 44 of 106 rats died with 300ppm (judging from the vapor pressure, it is considered to be steam with almost no mist) of 7-hour exposure (4-hour exposure equivalent of 1.95mg/L)
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	It was classified as Category 2 from description that irritation was found on human skin (CERI Hazard Data of (2002) and PATTY (4th, 1994)).
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	From description that irritant was indicated to the eye of the human (CERI Hazard Data(2002)), and from description that although the eye was stimulated comparatively seriously, critical damage did not occur (PATTY (4th, 1994)), it was set to Category2A.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Category1	(Respiratory sensitization)-; (Skin sensitization)Exclamation mark	(Respiratory sensitization)-; (Skin sensitization)Warning	(Respiratory sensitization)-; (Skin sensitization)May cause allergic skin reaction	Respiratory sensitization: No data Skin sensitization: Classified as Category 1 because CERI Hazard Data (2002) describes that skin sensitization is found in humans.

5	Germ cell mutagenicity	Category 2	Health hazard	Warning	Suspected of causing genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	There are negative results from the dominant lethal tests in mice (CERI Hazard Data, 2002, IARC 60, 1994) and from the chromosome aberration tests and the micronucleus tests (intraperitoneal administration or inhalation exposure) using bone-marrow cells from mice and hamsters, which are in vivo mutagenicity tests using somatic cells (CERI Hazard Data, 2002, IARC 60, 1994). But there are positive results from the chromosome aberration tests using oral administration of mouse bone-marrow cells (CERI Hazard Data, 2002, IARC 60, 1994) and there is no positive result in in vivo genotoxicity tests using germ cells. So the substance was classified as Category 2.
6	Carcinogenicity	Category 1B	Health hazard	Danger	May cause cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	It is classified into group 2A according to IARC (IARC 60 (1994)) and into 2A according to Japan Society for Occupational Health (Japan Society for Occupational Health recommendation (2005)), into R according to NTP (NTP RoC (11th, 2005)), and is classified into the category 2 according to EU (EU-Annex I, 2005). So it was set as Category 1B.
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Since there were the reduction of fertility by resorption preimplantation embryo, and the increase of resorption in the dose causing general toxicity such as the death of maternal animals in the rat and rabbit pregnancy inhalation exposure test (CERI Hazard Data (2002), IARC 60 (1994) and PATTY (4th, 1994)), it is classified into the Category 2.
8	Specific target organs/systemic toxicity following single exposure	Category 3 (narcotic effects)	Exclamation mark	Warning	May cause respiratory irritation or may cause drowsiness and dizziness (narcotic effects)	Due to the descriptions that central nervous systems may be affected by effect of short-term exposure in ICSC (J) (1994) and of SITTIG (4th, 2002), and that headaches, dizziness, etc. may be started by short-term exposure in HSFS (1999). So it was classified into Category 3 (anesthetic actions).
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (liver)	Health hazard	Warning	May cause damage to organs (liver) through prolonged or repeated	Since there is the description that it is impaired to human liver in HSFS (1999) and SITTIG (4th, 2002), it is judged that target organ was liver, and it were classified into 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)	Category 2	-	-	Toxic to aquatic life	It was classified into Category 2 from 48-hour EC50=1.9mg/L of Crustacea (Daphnia magna) (MOE eco-toxicity tests of chemicals, 2002).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since rapidly degrading (BOD: 81% (existing chemical safety inspections data)), and less bio-accumulative (log Kow=1.61 (PHYSPROP Database, 2005)).