

## GHS Classification

**ID668**

**fonofos**

**CAS 944-22-9**

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	-	-	-	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	Category 4 because of its flash point: 90degC
7 Flammable solids	Not applicable	-	-	-	Liquid (GHS definition)
8 Self-reactive substances and mixtures	Classification not possible	-	-	-	Classification not possible due to lack of data, though the substance contains P-O bonds as chemical groups with self-reactive properties present.
9 Pyrophoric liquids	Not classified	-	-	-	Since measurements of flash points was made under temperatures higher than the room temperatures (94 degC) (ICSC (1997)), it was judged as not igniting spontaneously in normal temperatures, it was classified as outside of Category.
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	Classification not possible	-	-	-	No data available
14 Oxidizing solids	Not applicable	-	-	-	Liquid (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Organic compounds containing no -O-O- structure
16 Corrosive to metals	Classification not possible	-	-	-	Although the corrosion to steels is indicated (HSDB (2005)), since there are no other data, it cannot be classified.

**Health Hazards**

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 2	Skull and crossbones	Danger	Fatal if swallowed	It was set as Category 2 based on LD50=5.74 mg/kg calculated by nine data (ACGIH (2001), PATTY (5th, 2001), PIMs (1998)) of rats. In addition, only one data of PATTY (5th, 2001) described LD50 with dividing into racemic mixtures, S object, and R object. But all other data had particularly made reference about used isomer, it considered altogether that it was racemic mixtures. And it used only the value of racemic mixtures for calculation also from one data of PATTY (5th, 2001).
1 Acute toxicity (dermal)	Category 2	Skull and crossbones	Danger	Fatal in contact with skin	It was set as Category 2 based on LD50 = 147mg/kg (ACGIH (2001)) in rat dermal administration.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Liquid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: dust, mist)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	Since the saturated vapor pressures concentrations pressure of this product is 0.49ppm, it is thought that the inhalation study was done in mist. Based on LC50 = 0.225mg/L (4-hour equivalent) which is the lower one among the rat inhalation 2 data (ACGIH (2001)), it was set as Category 2.
2 Skin corrosion / irritation	Not classified	-	-	-	Based on the statement that skin irritation was not indicated on rabbits (ACGIH (2001), PATTY (5th, 2001)), it was classified as out of Category.
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	There is a statement that stimulation for the eyes of rabbits can be disregarded (ACGIH (2001), PATTY (5th, 2001)), and in humans, there are statements that an eye may be stimulated (ACGIH (2001)), and that when an eye are contacted, redness, a pain, and a blurred vision are produced (ICSC (1997)). It was set as Category 2A-2B based on the humans information.
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)-	No data available

5	Germ cell mutagenicity	Not classified	-	-	-	We found no human over generation epidemiology, the over generation mutagenicity test, and the productive cell in vivo mutagenicity test, in addition, it gave negative for somatic cell in vivo mutagenicity test (micronucleus test which used mouse bone marrow cells) (HSDB (2005)). Therefore we classified it as Out Of Category.
6	Carcinogenicity	Not classified	-	-	-	Since it was classified into A4 according to ACGIH (ACGIH-TLV(2005) cited in HSDB (2005)), it carried out the outside of Category.
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	There is also a statement that parents' reproductive potential and the offsprings' growth and development were not affected in three-generation tests of rats (ACGIH (2001), PATTY (5th, 2001)). Since there is a statement that in rabbit organogenetic-period administration tests, postimplantation death increased at a dose which is mildly toxic to maternal animals (HSDB (2005)), it was classified into Category 2.
8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system)	Health hazard	Danger	Cause damage to organs (nervous system)	There is the findings that suggest the effect to nervous system such as muscle fiber spasm, tremor, salivation, panting in the dose in the guidance value range of Category 1 in rat (ACGIH (2001)). There is the examples of nervous system disorders such as malevolence/vomiting, salivation, diaphoresis, muscle fiber spasm, myosis, dizziness, bleary eyes from the ingestion of this substance in human, and there is the description that there is the appearance of these symptoms as nervous symptom by the inhibition of cholinesterase. It is classified into Category 1 (nervous systems) from the above information.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (nervous system, liver, small intestine)	Health hazard	Danger	Causes damage to organs (nervous system, liver, small intestine) through prolonged or repeated exposure	There is a statement that in rats and dogs, the cholinesterase inhibition in red blood cell and plasma or serum, and histologic changes of small intestine and liver are observed in the dosage of guidance value within the limits of category 1(PATTY (5th, 2001), HSDB (2005)). There is a statement that in humans cholinesterase inhibition, depression, anxiety, convulsion and respiratory insufficiency etc. owing to neuropathy and hepatic dysfunction may be occurred (ICSC (J), (1997), HSFS (1999), SITTIG (2002)). It was classified to as Category 1 (a nervous system, liver, small intestine) based on the above informations.
10	Aspiration hazard	Classification not possible	-	-	-	Insufficient 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 96-hour LC50=1.09mg/L of fishes (Fathead minnows) (ECETOC TR91, 2003).
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 supposed not rapidly degrading (BIOWIN), though supposed less bio-accumulative (log Kow=3.94(PHYSPROP Database, 2005)).