

Material Safety Data Sheet (M S D S)

Revised on March 2, 2009

Name of product	PUROGENE
Chemical classification	The mixture of a chlorination oxide
Chemical and a common name	Aqueous Chlorine Dioxide
Another name	N/A
CAS No.	None (Mixture)
NFPA standard	(No danger 0 ~ worst 4) 1 Fire hazard =0 Healthy danger =1 Reaction danger =1 Special instruction : None
Notes	There is a case of ocular irritation and skin irritancy.
EPA registration No.	EPA 9804-5
Manufacturing company name	Bio-cide International
	2845 Broce Drive, Norman, Oklahoma, (P.O Box 2700) U.S.A
Company name for Repack	Chukyo Chemical Industries(Phone:052-871-8431) 2-13-25, Hukue, showa, Nagoya. 466-8630
Toxic constituent	Sodium chlorite, chlorine dioxide 3.35%
Appearance and smell	Water-white liquid with very few odors of chlorine
Boiling point	100.55
Melting point	N/A
Steam pressure(25°C)	23.7mm/Hg
Steam density	0.02kg/ m ³
Specific gravity (20°C)	1.03g/ml
Volatile matter content (capacity)	97%
Octanol/water partition coefficient NE	NE
Evaporated rate	Equivalent to water
pH	8.0 ~ 8.5
Solubility to water	completely mixable.
Flash point (method)	No flammability.
Fire-extinguishing material	Water may be sufficient as long as it removes directions of the contraindications by other substances contained in fire.
Fire-fighting instrument	Standard protection tools which equipped the respiratory-organs implement
The method of special fire fighting	Must be careful not to make it evaporate in an extreme dry state.
Danger of exceptional ignition and explosion	The sodium chlorite generated when solution dries is a powerful oxidizer which helps combustion. Moreover, since the chlorine dioxide generated from solution has the danger of explosion by the gas phase of 10% or more of high concentration solution, care about storage.
Stability	stability
State which should be avoided	It should become rock salt and should avoid storage in the state where it evaporates.
Contraindications (substance which should be avoided)	You should avoid the contact with acid, a chlorine system compound, a hypochlorite (for bleaching), sulfur, a sulfite compound, phosphorus, the organic solvent, an inflammability, an inflammable substance, etc.
Harmful decomposition output	If acid or a chloride compound is contacted, an isolation chlorine dioxide (gas) will be generated.
Harmful polymerization	Polymerization does not take place.
Assimilation	Oral LD50 of a rat is 4,360mg/kg. Gastrointestinal discomfort, nausea, and vomiting and the shape of diarrhea may be caused. In abundant ingestion, it may get methemoglobinemia.
Contact to an eye	The light stimulus to a conjunctiva, a cornea, and a palpebra is occurred.
Contact to a skin	Slight erythema and locally dropsy may appear in long exposure, and a light stimulus may occur.
Absorption from the skin	It seems that quantity to the extent that toxicity is shown through the skin is not absorbed.
Inhalation	Acute inhalation is LC50>5.61 mg/L. A stimulus may be felt nose or throat when the shape of a fog is inhaled for a long time. Moreover, when the isolation chlorine dioxide gas at the time of activation is inhaled, a stimulus and headache of respiratory mucous membrane may be got develop.
Body and others the influence	Unknown
Unusual inflammation by exposure	There is fear of a skin hazard like cutaneous allergy or dermatitis. When long exposure is carried out in the state of gas, a pulmonary damage like pulmonary emphysema may be caused.
Carcinogenicity	The data which makes carcinogenicity suspect is not proved.
Mutation nature	The data which makes mutation nature suspect is not proved.
The effect to a sexual organ	There is no knowledge of the data accepted to be effective.

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