

**MATERIAL SAFETY DATA SHEET**Date Updated: 06.12.2004  
Version: 1.0**GLUTARALDEHYDE****\*\*\*\* SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION \*\*\***

MSDS Name: Gluataraldehyde, technical grade

Chemical Name: Gluataraldehyde, technical grade

Company Identification: Dalian Onichem Co., Ltd.

218-220, No. 2 Gaoxin Street, Qixianling, Dalian 116023, P.R. China

Tel: 86-411-84794022, Fax: 86-411-84794077

For emergencies, call CHEMTREC 1-800-424-9300 or 1-202-483-7616

**\*\*\*\* SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS \*\*\*\***

CAS#	Chemical Name,	%
111-30-8	Gluataraldehyde,	50%
7732-18-5	Water	50%

**\*\*\*\* SECTION 3 - HAZARDS IDENTIFICATION \*\*\*\*****EMERGENCY OVERVIEW**

Swallowed: Moderately toxic. May cause moderate to marked irritation and possibly chemical burns of the mouth, throat, oesophagus and stomach, with discomfort or pain in the mouth. throat, chest and abdomen, nausea, vomiting, diarrhoea, dizziness, faintness, drowsiness, thirst, weakness, circulatory collapse and coma. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury.

Eye: Liquid will cause severe and persistent conjunctivitis, seen as excess redness and marked swelling of the conjunctiva with profuse discharge. Severe corneal injury may develop, which could permanently impair vision if prompt first-aid and medical treatment are not obtained. Vapour will cause stinging sensations in the eye with excess tear production, blinking, and possibly a slight excess redness of the conjunctiva.

Skin: Brief contact will cause itching with mild to moderate local redness and possibly swelling. Prolonged contact may result in pain, severe redness and swelling, with ulceration, tissue destruction, and possibly bleeding into the inflamed area.

Inhaled: Vapour is irritating to the respiratory tract, causing stinging sensations in the nose and throat, discharge from the nose, possibly bleeding from the nose, coughing, chest discomfort and tightness, difficulty with breathing, and headache.

Chronic: Repeated skin contact could result in a cumulative dermatitis. May cause skin sensitisation in a small proportion of individuals and present as an allergic contact dermatitis. This usually results from contact with the liquid, but occasionally there may be a reaction to the glutaraldehyde vapour. Will cause signs and symptoms of an asthmatic attack in hyper-reactive individuals.

**\*\*\*\* SECTION 4 - FIRST AID MEASURES \*\*\*\***

Swallowed: DO NOT INDUCE VOMITING. Do not give anything to drink. Obtain medical attention without delay.

Eye: Immediately flush eyes with copious amounts of water for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

Skin: Immediately remove contaminated clothing and shoes. Wash skin with soap and copious amounts of water. Wash contaminated clothing before reuse. Discard contaminated leather articles such as shoes and belt.

Inhaled: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen may be given by qualified personnel. Obtain medical attention.

Advice to Doctor: The hazards of this material are due mainly to its severely irritant properties on skin and mucosal surfaces. Moderately toxic by swallowing. Moderately toxic by absorption across the skin. Due to the severely irritating or corrosive nature of the material, swallowing may lead to ulceration and inflammation of the upper alimentary tract with haemorrhage and fluid loss. Also, perforation of the oesophagus or stomach may occur, leading to mediastinitis or peritonitis and the

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resultant complications. The stomach should be evacuated carefully in case of ingestion. Any material aspirated during vomiting may cause lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (e.g. gastric lavage after endotracheal intubation).

**\*\*\*\* SECTION 5 - FIRE FIGHTING MEASURES \*\*\*\***

Extinguishing media: non flammable (aqueous solution): after the water evaporates, the remaining material will burn. Use alcohol-type or all-purpose-type foam applied by manufacturer's recommended technique for large fires. Use CO<sub>2</sub> or dry chemical media for small fires. Use self-contained breathing apparatus and protective clothing. Burning can produce carbon monoxide and/or carbon dioxide. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant. General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

**\*\*\*\* SECTION 6 - ACCIDENTAL RELEASE MEASURES \*\*\*\***

Wear suitable protective equipment. Toxic to fish; avoid discharge to natural waters. Very low concentrations (10ppm or less) can be degraded in a biological treatment system. Small spills can be flushed with large quantities of water. Large quantities or 'slugs' can be harmful to the treatment system. Thus, large spills should be collected for disposal. It may also be possible to decontaminate spilled material by careful application of aqueous sodium hydroxide or dibasic ammonium phosphate solution. Depending on conditions, considerable heat and fumes can be liberated by the decontamination reaction.

Waste disposal method: Atomise into a very hot incinerator fire or mix with a suitable flammable solvent and incinerate where permitted. High water content may dampen flame. Observe all federal, state and local environmental regulations.

**\*\*\*\* SECTION 7 - HANDLING and STORAGE \*\*\*\***

Handling: N/A.

Storage: in dry and cool area.

**\*\*\*\* SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION \*\*\*\***

General (mechanical) room ventilation is expected to be satisfactory where this product is stored and handled in closed equipment.

Personal Protection: Use self-contained breathing apparatus in high vapour concentrations. If self contained breathing apparatus is not available, a MSHA/NIOSH approved air purifying respirator equipped with an organic vapour cartridge should be used. Wear rubber, nitrile (NBR), butyl or polyethylene gloves. Wear mono goggles or face shield. Wear rubber boots, chemical apron.

Flammability: Use with adequate ventilation.

**\*\*\*\* SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES \*\*\*\***

Appearance: Transparent colourless liquid, sharp fruity medicinal odour

Boiling Point/Melting Point: ~100.5oC BP

Vapour Pressure: 0.20mm Hg at 20oC

Specific Gravity: 1.129 at 20oC

Flash point: None, tag closed cup ASTM D 56 / None, tag open cup ASTM D 1310

Flammability Limits: Not determined

Solubility in Water: 1000g/L

**\*\*\*\* SECTION 10 - STABILITY AND REACTIVITY \*\*\*\***

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: alkalic materials

**\*\*\*\* SECTION 11 - TOXICOLOGICAL INFORMATION \*\*\*\***

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Studies in humans have shown that glutaraldehyde is neither phototoxic nor a photosensitiser. Subchronic drinking water studies in rats, mice and dogs using concentrations up to 1000ppm showed no evidence for any target organ toxicity. In vitro studies for genotoxicity using a variety of assays have given results varying from no activity, through equivocal, to weakly positive; however, all in vitro studies from genotoxicity have been uniformly negative. Several developmental toxicity studies have demonstrated that at maternally non toxic doses, glutaraldehyde does not produce fetotoxic, embryotoxic or teratogenic effects. In a chronic (2-year) continuous drinking water combined chronic toxicity-oncogenic study using Fisher 344 rats, there was no evidence for non-oncogenic target organ toxicity. The only possible oncogenicity related finding was an increase in the incidence of large granular cell lymphocytic leukemia in female, but not male, rats. The pattern of the response suggests that it does not represent direct chemical carcinogenic activity but, rather, a modifying influence on the expression of this spontaneous and commonly occurring neoplasm in the Fisher 344 rat.

**\*\*\*\* SECTION 12 - ECOLOGICAL INFORMATION \*\*\*\***

Not available

**\*\*\*\* SECTION 13 - DISPOSAL CONSIDERATIONS \*\*\*\*****APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION**

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

**\*\*\*\* SECTION 14 - TRANSPORT INFORMATION \*\*\*\***

Not available

Not listed by DOT / IMDG

**\*\*\*\* SECTION 15 - REGULATORY INFORMATION \*\*\*\***

Safety Statements: Keep away from sources of ignition – no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

Risk Statements: Irritating to eyes, respiratory system and skin.

**\*\*\*\* SECTION 16 - ADDITIONAL INFORMATION \*\*\*\***

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if we have been advised of the possibility of such damages.