

FRESHWATER/SALTWATER NITRITE TEST SOLUTION

Chemwatch GHS Safety Data Sheet
For Domestic Use Only.
Dec-23-2009
NC614TDP

CHEMWATCH 4650-16
Version No:6
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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

FRESHWATER/SALTWATER NITRITE TEST SOLUTION

OTHER NAMES

"Solution ID# 3317"

PRODUCT USE

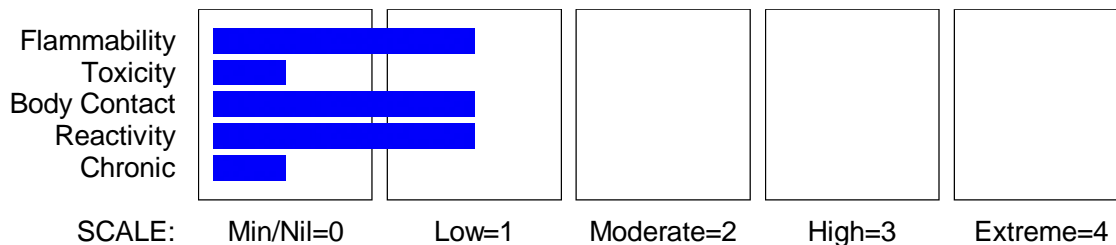
Nitrate test solution for products 26, 34 and 401M.

SUPPLIER

Company: Mars Fishcare Inc
Address:
50 East Hamilton Street
Chalfont
PA, 18914
USA
Telephone: +1 215 822 8181
Fax: +1 215 822 1906

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS



GHS Classification

Eye Irritation Category 2A
Skin Corrosion/Irritation Category 3



EMERGENCY OVERVIEW

continued...

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Section 2 - HAZARDS IDENTIFICATION

HAZARD

WARNING

Determined by Chemwatch using GHS criteria:

H316 H319

Causes mild skin irritation

Causes serious eye irritation

PRECAUTIONARY STATEMENTS

Prevention

Wash thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If skin irritation occurs: Get medical advice/ attention.

If eye irritation persists: Get medical advice/attention.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
polyethylene glycol	25322-68-3	<95
hydrochloric acid	7647-01-0	0.97

Section 4 - FIRST AID MEASURES

SWALLOWED

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

EYE

If this product comes in contact with eyes:

- Wash out immediately with water.
- If irritation continues, seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin or hair contact occurs:

- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

NOTES TO PHYSICIAN

Treat symptomatically.

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Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

FIRE/EXPLOSION HAZARD

- Combustible.
 - Slight fire hazard when exposed to heat or flame.
 - Heating may cause expansion or decomposition leading to violent rupture of containers.
 - On combustion, may emit toxic fumes of carbon monoxide (CO).
 - May emit acrid smoke.
 - Mists containing combustible materials may be explosive.
- Combustion products include: carbon dioxide (CO₂), hydrogen chloride, other pyrolysis products typical of burning organic material, phosgene.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:
Safety Glasses.

Gloves:
When handling larger quantities:

Respirator:
Type B- P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

ACUTE EXPOSURE GUIDELINE LEVELS (AEGL) (in ppm)

hydrochloric acid

AEGL Type	10 min	30 min	60 min	4 hr	8 hr
AEGL 1	1.8	1.8	1.8	1.8	GALSYN~
AEGL 2	100	43	22	11	GALSYN~
AEGL 3	620	210	100	26	GALSYN~

AEGL 1: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could

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Section 6 - ACCIDENTAL RELEASE MEASURES

experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.

AEGL 2: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.

AEGL 3: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- DO NOT USE brass or copper containers / stirrers.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

SUITABLE CONTAINER

- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



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 Section 7 - HANDLING AND STORAGE

+: May be stored together
 O: May be stored together with specific preventions
 X: Must not be stored together

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

US OSHA Permissible Exposure Levels (PELs)

Z	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	Max excursion ppm	Max excursion mg/m ³	Max excursion duration (mins)	TWA F/CC
Z3	Inert or Nuisance Dust: (d) Respirable fraction		5								
Z3	Inert or Nuisance Dust: (d) Total dust		15								
Z1	Hydrogen chloride					5	7				

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	Notes
US - Oregon Permissible Exposure Limits (Z3)	polyethylene glycol (Inert or Nuisance Dust: (d) Total dust)		10					*
US OSHA Permissible Exposure Levels (PELs) - Table Z3	polyethylene glycol (Inert or Nuisance Dust: (d) Respirable fraction)		5					
US OSHA Permissible Exposure Levels (PELs) - Table Z3	polyethylene glycol (Inert or Nuisance Dust: (d) Total dust)		15					
US - Hawaii Air Contaminant Limits	polyethylene glycol (Particulates not other wise regulated - Total dust)		10					
US - Hawaii Air Contaminant Limits	polyethylene glycol (Particulates not other wise regulated - Respirable fraction)		5					

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	Notes
US - Oregon Permissible Exposure Limits (Z3)	polyethylene glycol (Inert or Nuisance Dust: (d) Respirable fraction)		5					*
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	polyethylene glycol (Particulates not otherwise regulated Respirable fraction)		5					
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	polyethylene glycol (Particulates not otherwise regulated (PNOR)(f)-Respirable fraction)		5					
US - Michigan Exposure Limits for Air Contaminants	polyethylene glycol (Particulates not otherwise regulated, Respirable dust)		5					
Canada - British Columbia Occupational Exposure Limits	hydrochloric acid (Hydrogen chloride Revised 2003)					2		
Canada - Ontario Occupational Exposure Limits	hydrochloric acid (Hydrogen chloride)					2		
US - Minnesota Permissible Exposure Limits (PELs)	hydrochloric acid (Hydrogen chloride)					5	7	
US ACGIH Threshold Limit Values (TLV)	hydrochloric acid (Hydrogen chloride)					2		TLV Basis: upper respiratory tract irritation
US NIOSH Recommended Exposure Limits (RELs)	hydrochloric acid (Hydrogen chloride)					5	7	

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Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	Notes
Canada - Alberta Occupational Exposure Limits	hydrochloric acid (Hydrogen chloride)					2	3	
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	hydrochloric acid (Hydrogen chloride)					5	7	
US - Vermont Permissible Exposure Limits Table Z- 1- A Transitional Limits for Air Contaminants	hydrochloric acid (Hydrogen chloride)	(C)5	(C)7					
US - Vermont Permissible Exposure Limits Table Z- 1- A Final Rule Limits for Air Contaminants	hydrochloric acid (Hydrogen chloride)					5	7	
US - California Permissible Exposure Limits for Chemical Contaminants	hydrochloric acid (Hydrogen chloride; muriatic acid)					5	7	
US - Idaho - Limits for Air Contaminants	hydrochloric acid (Hydrogen chloride)					5	7	
US - Hawaii Air Contaminant Limits	hydrochloric acid (Hydrogen chloride)					5	7	
US - Alaska Limits for Air Contaminants	hydrochloric acid (Hydrogen chloride)					5	7	
US - Michigan Exposure Limits for Air Contaminants	hydrochloric acid (Hydrogen chloride)					5	7	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	hydrochloric acid (Hydrogen chloride)	5	7	-	-			

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	Notes
US - Washington Permissible exposure limits of air contaminants	hydrochloric acid (Hydrogen chloride)					5.0		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	hydrochloric acid (Hydrogen chloride)					2		
US - Oregon Permissible Exposure Limits (Z1)	hydrochloric acid (Hydrogen chloride)					5	7	
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	hydrochloric acid (Hydrogen chloride)					5	7	
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	hydrochloric acid (Hydrogen chloride)					5	7, 5	
US OSHA Permissible Exposure Levels (PELs) - Table Z1	hydrochloric acid (Hydrogen chloride)					5	7	
Canada - Northwest Territories Occupational Exposure Limits (English)	hydrochloric acid (Hydrogen chloride)					5	7.5	
Canada - Nova Scotia Occupational Exposure Limits	hydrochloric acid (Hydrogen chloride)					2		TLV Basis: upper respiratory tract irritation

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	Notes
Canada - Prince Edward Island Occupational Exposure Limits	hydrochloric acid (Hydrogen chloride)					2		TLV Basis: upper respiratory tract irritation

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m ³)	Revised IDLH Value (ppm)
hydrochloric acid		50

MATERIAL DATA

POLYETHYLENE GLYCOL:

Not available. Refer to individual constituents.

HYDROCHLORIC ACID:

For powdered forms:

The polyethylene glycols are extremely low in oral toxicity, are not significantly irritating to the eyes or skin, and are not absorbed through the skin in toxic amounts. vapour pressures are extremely low and inhalation exposure is limited to mists. Based on experimental data and human experience, these substances do not present significant hazards to health in the workplace.

PERSONAL PROTECTION



EYE

- Safety glasses with side shields
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

HANDS/FEET

Wear general protective gloves, eg. light weight rubber gloves. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

OTHER

No special equipment needed when handling small quantities.

OTHERWISE:

- Overalls.
- Barrier cream.
- Eyewash unit.

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half- face Respirator	Full- Face Respirator
1000	10	B- AUS P	-
1000	50	-	B- AUS P
5000	50	Airline *	-
5000	100	-	B- 2 P
10000	100	-	B- 3 P
	100+		Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

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Type of Contaminant: solvent, vapours, degreasing etc., evaporating from tank (in still air)	Air Speed: 0.25- 0.5 m/s (50- 100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5- 1 m/s (100- 200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1- 2.5 m/s (200- 500 f/min)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

- 1: Room air currents minimal or favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood - local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Blue-green solution with no odour; mixes with water.

PHYSICAL PROPERTIES

Liquid.
Mixes with water.

State	Liquid	Molecular Weight	Not Applicable
Melting Range (°F)	Not Available	Viscosity	Not Available
Boiling Range (°F)	Not Available	Solubility in water (g/L)	Miscible
Flash Point (°F)	Not Applicable	pH (1% solution)	Not Available

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Decomposition Temp (°F)	Not Available	pH (as supplied)	Not Available
Autoignition Temp (°F)	Not Applicable	Vapour Pressure (mmHG)	Not Available
Upper Explosive Limit (%)	Not Applicable	Specific Gravity (water=1)	1.128
Lower Explosive Limit (%)	Not Applicable	Relative Vapour Density (air=1)	Not Available
Volatile Component (%vol)	Not Available	Evaporation Rate	Not Available

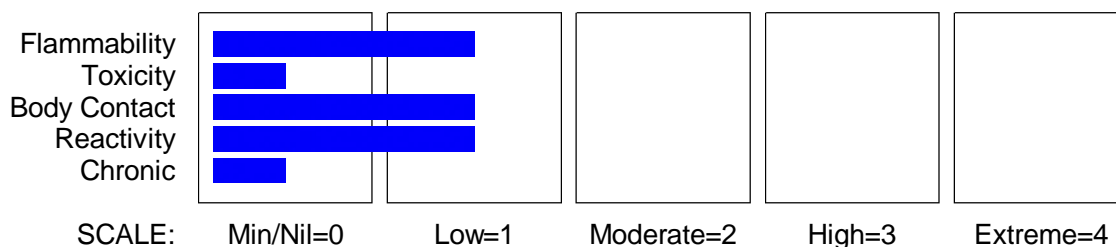
Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
 - Product is considered stable.
 - Hazardous polymerisation will not occur.
- For incompatible materials - refer to Section 7 - Handling and Storage.*

Section 11 - TOXICOLOGICAL INFORMATION

CHEMWATCH HAZARD RATINGS



POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (eg. liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

EYE

Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

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INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Not normally a hazard due to non-volatile nature of product.

Inhalation hazard is increased at higher temperatures.

CHRONIC HEALTH EFFECTS

Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

TOXICITY AND IRRITATION

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

POLYETHYLENE GLYCOL:

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Oral (rat) LD50: 33750 mg/kg

for molecular weights (200-8000) *

Oral (rat) LD50: 31000->50000 mg/kg

Oral (mice) LD50: 38000->50000 mg/kg

Oral (g.pig) LD50: 17000->50000 mg/kg

Oral (rabbit) LD50: 14000->50000 mg/kg

Intraperitoneal (mice) LD50: 3100-12900 mg/kg

IRRITATION

Skin (rabbit): 500mg/24h - mild.

Eye (rabbit): 500mg/24h - mild.

* AIHA WEEL Guides

HYDROCHLORIC ACID:

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Unreported (man) LDLo: 81 mg/kg

Inhalation (human) LCLo: 1300 ppm/30 min

Inhalation (human) LCLo: 3000 ppm/5 min

Inhalation (rat) LC50: 3124 ppm/1h

Oral (rat) LD50: 900 mg/kg

IRRITATION

Eye (rabbit): 5mg/30s - Mild

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged

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exposure to irritants may produce conjunctivitis.
The substance is classified by IARC as Group 3:
NOT classifiable as to its carcinogenicity to humans.
Evidence of carcinogenicity may be inadequate or limited in animal testing.

CARCINOGEN

Hydrochloric acid	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	3
Hydrogen chloride	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	A4

Section 12 - ECOLOGICAL INFORMATION

Refer to data for ingredients, which follows:

POLYETHYLENE GLYCOL:

BOD 5 if unstated: 0-0.02,1%

COD: 1.62-1.74,98%

Toxicity Fish: TLm(96)>10000mg/L

HYDROCHLORIC ACID:

Hazardous Air Pollutant:	Yes
Fish LC50 (96hr.) (mg/l):	0.282

Ecotoxicity:

The tolerance of water organisms towards pH margin and variation is diverse. Recommended pH values for test species listed in OECD guidelines are between 6.0 and almost 9. Acute testing with fish showed 96h-LC50 at about pH 3.5.

Although inorganic chloride ions are not normally considered toxic they can exist in effluents at acutely toxic levels (chloride >3000 mg/l). the resulting salinity can exceed the tolerances of most freshwater organisms.

Inorganic chlorine eventually finds its way into the aqueous compartment and as such is bioavailable. Incidental exposure to inorganic chloride may occur in occupational settings where chemicals management policies are improperly applied. The toxicity of chloride salts depends on the counter-ion (cation) present; that of chloride itself is unknown. Chloride toxicity has not been observed in humans except in the special case of impaired sodium chloride metabolism, e.g. in congestive heart failure. Healthy individuals can tolerate the intake of large quantities of chloride provided that there is a concomitant intake of fresh water.

Although excessive intake of drinking-water containing sodium chloride at concentrations above 2.5 g/litre has been reported to produce hypertension, this effect is believed to be related to the sodium ion concentration.

Chloride concentrations in excess of about 250 mg/litre can give rise to detectable taste in water, but the threshold depends upon the associated cations. Consumers can, however, become accustomed to concentrations in excess of 250 mg/litre. No health-based guideline value is proposed for chloride in drinking-water.

In humans, 88% of chloride is extracellular and contributes to the osmotic activity of body fluids. The electrolyte balance in the body is maintained by adjusting total dietary intake and by excretion via the kidneys and gastrointestinal tract. Chloride is almost completely absorbed in normal individuals, mostly from

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Section 12 - ECOLOGICAL INFORMATION

the proximal half of the small intestine. Normal fluid loss amounts to about 1.5?2 liters/day, together with about 4 g of chloride per day. Most (90 - 95%) is excreted in the urine, with minor amounts in faeces (4- %) and sweat (2%).

Chloride increases the electrical conductivity of water and thus increases its corrosivity. In metal pipes, chloride reacts with metal ions to form soluble salts thus increasing levels of metals in drinking-water. In lead pipes, a protective oxide layer is built up, but chloride enhances galvanic corrosion. It can also increase the rate of pitting corrosion of metal pipes.

Prevent, by any means available, spillage from entering drains or water courses.

DO NOT discharge into sewer or waterways.

Ecotoxicity

Fish LC100 (24 h): trout 10 mg/l

TLm (96 h): mosquito fish 282 ppm (fresh water)

LC50: goldfish 178 mg/l

Shrimp LC50 (48 h): 100 - 330 ppm (salt water)

Starfish LC50 (48 h): 100 - 330 mg/l

Cockle LC50 (48 h): 330 - 1000 mg/l

[Hach]

Hydrogen chloride in water dissociates almost completely, releasing hydrogen and chloride ions; the hydrogen ions are captured by water to produce hydronium ions.

Hydrochloric acid infiltrates soil, the rate dependent on moisture content. During soil transport, hydrochloric acid dissolves soil components.

Drinking water standard:

chloride: 400 mg/l (UK max.)

250 mg/l (WHO guideline)

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
polyethylene glycol	LOW		LOW	HIGH
hydrochloric acid	LOW		LOW	HIGH

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle where possible
Otherwise ensure that:
- licenced contractors dispose of the product and its container.
- disposal occurs at a licenced facility.

Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

Section 15 - REGULATORY INFORMATION

REGULATIONS

Regulations for ingredients

continued...

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Section 15 - REGULATORY INFORMATION

polyethylene glycol (CAS: 25322-68-3) is found on the following regulatory lists;

"GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances", "US - Minnesota Hazardous Substance List", "US Cosmetic Ingredient Review (CIR) Cosmetic ingredients found safe, with qualifications", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes", "US EPA High Production Volume Program Chemical List", "US FDA Indirect Food Additives: Adhesives and Components of Coatings - Substances for Use Only as Components of Adhesives - Adhesives", "US Food Additive Database", "US Inventory of Effective Food Contact Substance Notifications", "US Toxic Substances Control Act (TSCA) - Inventory"

hydrochloric acid (CAS: 7647-01-0) is found on the following regulatory lists;

"Canada - Alberta Ambient Air Quality Objectives", "Canada - Alberta Occupational Exposure Limits", "Canada - British Columbia Occupational Exposure Limits", "Canada - Northwest Territories Occupational Exposure Limits (English)", "Canada - Nova Scotia Occupational Exposure Limits", "Canada - Ontario Occupational Exposure Limits", "Canada - Prince Edward Island Occupational Exposure Limits", "Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)", "Canada - Saskatchewan Industrial Hazardous Substances", "Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits", "Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances", "Canada Controlled Drugs and Substances Act Schedule VI", "Canada Domestic Substances List (DSL)", "Canada Ingredient Disclosure List (SOR/88-64)", "Canada National Pollutant Release Inventory (NPRI)", "Canada Prohibited Toxic Substances, Schedule 2, Concentration Limits (English)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (French)", "CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "International Council of Chemical Associations (ICCA) - High Production Volume List", "International Maritime Dangerous Goods Requirements (IMDG Code) - Goods Forbidden for Transport", "OECD Representative List of High Production Volume (HPV) Chemicals", "United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II", "United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control - Table II", "US - Alaska Limits for Air Contaminants", "US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which emissions must be quantified", "US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List", "US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELS)", "US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELS)", "US - California Permissible Exposure Limits for Chemical Contaminants", "US - California Toxic Air Contaminant List Category II", "US - Connecticut Hazardous Air Pollutants", "US - Hawaii Air Contaminant Limits", "US - Idaho - Limits for Air Contaminants", "US - Massachusetts Oil & Hazardous Material List", "US - Michigan Exposure Limits for Air Contaminants", "US - Minnesota Hazardous Substance List", "US - Minnesota Permissible Exposure Limits (PELs)", "US - New Jersey Right to Know Hazardous Substances", "US - Oregon Hazardous Materials", "US - Oregon Permissible Exposure Limits (Z1)", "US - Pennsylvania - Hazardous Substance List", "US - Rhode Island Hazardous Substance List", "US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants", "US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants", "US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants", "US - Washington Permissible exposure limits of air contaminants", "US - Wyoming List of Highly Hazardous Chemicals, Toxics and Reactives", "US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants", "US ACGIH Threshold Limit Values (TLV)", "US ACGIH Threshold Limit Values (TLV) - Carcinogens", "US Clean Air Act - Hazardous Air Pollutants", "US CWA (Clean Water Act) - List of Hazardous Substances", "US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances", "US Department of Homeland Security Chemical Facility Anti-Terrorism Standards - Chemicals of Interest", "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals", "US EPA Acute Exposure Guideline Levels (AEGLS) - Final", "US EPA High Production Volume Chemicals Additional List", "US EPA Master Testing List - Index I Chemicals Listed", "US EPCRA Section 313 Chemical List", "US Food Additive Database", "US List of Lists - Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act (EPCRA) and Section 112(r) of the Clean Air Act", "US NFPA 45 Fire Protection for Laboratories Using Chemicals - Flammability Characteristics of Common Compressed and Liquefied Gases", "US NIOSH Recommended Exposure Limits (RELs)", "US OSHA List of Highly Hazardous Chemicals, Toxics and Reactives", "US OSHA Permissible Exposure Levels (PELs) - Table Z1", "US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide", "US SARA Section 302 Extremely Hazardous Substances", "US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants", "US Toxic Substances Control Act (TSCA) - Inventory"

No data for Freshwater/Saltwater Nitrite Test Solution (CW: 4650-16)

Section 16 - OTHER INFORMATION

CONTACT

Mars Fishcare

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references.

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following U.S. Regulations and Standards:

OSHA Standards - 29 CFR:

1910.132 - Personal Protective Equipment - General requirements

continued...

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Section 16 - OTHER INFORMATION

1910.133 - Eye and face protection
1910.134 - Respiratory Protection
1910.136 - Occupational foot protection
1910.138 - Hand Protection
Eye and face protection - ANSI Z87.1
Foot protection - ANSI Z41
Respirators must be NIOSH approved.

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Issue Date: Dec-23-2009
Print Date: May-20-2010