

# LIQUID AMMONIA TEST SOLUTION #1

Chemwatch Material Safety Data Sheet  
Jun-5-2007  
NB293ECP

CHEMWATCH 4650-12  
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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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### PRODUCT NAME

LIQUID AMMONIA TEST SOLUTION #1

### STATEMENT OF HAZARDOUS NATURE

**CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.**

### SUPPLIER

Company: Aquarium Pharmaceuticals Inc  
Address:  
PO Box 218  
Chalfont  
PA, 18914- 0218  
USA  
Telephone: +1 215 822 8181  
Emergency Tel: +1800 222 1222 (US Only)

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

### PRODUCT USE

Ammonia test solution for product LR8600, 34 and 401M.

### SYNONYMS

"Solution ID# 3335A"

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## Section 2 - HAZARDS IDENTIFICATION

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### CANADIAN WHMIS SYMBOLS



### EMERGENCY OVERVIEW

#### RISK

Ingestion may produce health damage\*.  
Cumulative effects may result following exposure\*.  
Possible respiratory sensitizer\*.  
Possible skin sensitizer\*.  
May be harmful to the fetus/ embryo\*.

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

#### SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual.  
Large oral doses of salicylates may cause mild burning pain in the throat, stomach and

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usually prompt vomiting. Several hours may elapse before the development of deep and rapid breathing, lassitude, anorexia, nausea, vomiting, thirst and occasional diarrhoea. Common derivatives of salicylic acid produce substantially the same toxic syndrome, ("salicylism"). Major signs and symptoms arise from stimulation and terminal depression of the central nervous system. Stimulation produces vomiting, hyperpnea (abnormal increase in rate and depth of respiration), headache, tinnitus (ringing in the ears) confusion, bizarre behaviour or mania, generalised convulsions. Death is due to respiratory failure or cardiovascular collapse. Severe sensory disturbances such as deafness and dimness of vision are common. Less common features include sweating, skin eruptions, gastrointestinal and other hemorrhages, renal failure and pancreatitis. A tendency to bleed may be manifest by blood in the vomitus (haematemesis), bloody stools (melena) or purplish-red spots (petechiae) on the skin. Many of the toxic effects detailed here are due to or aggravated by severe disturbance of acid-base balance with the chief cause being prolonged hyperventilation from central stimulation. An assessment of acute salicylate intoxication based on dose suggests; 500 mg/mg: Potentially lethal.

## 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.

Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

## INHALED

The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and 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

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Limited evidence shows that inhalation of the material is capable of inducing a sensitisation reaction in a significant number of individuals at a greater frequency than would be expected from the response of a normal population.

Pulmonary sensitisation, resulting in hyperactive airway dysfunction and pulmonary allergy may be accompanied by fatigue, malaise and aching. Significant symptoms of exposure may persist for extended periods, even after exposure ceases. Symptoms can be activated by a variety of nonspecific environmental stimuli such as automobile exhaust, perfumes and passive smoking.

There exists limited evidence that shows that skin contact with the material is capable either of inducing a sensitisation reaction in a significant number of individuals, and/or of producing positive response in experimental animals.

There is some evidence that human exposure to the material may result in developmental toxicity. This evidence is based on animal studies where effects have been observed in the absence of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not secondary non-specific consequences of the other toxic effects. Chronic exposure to the salicylates (o-hydroxybenzoates) may produce metabolic and central system disturbances or damage to the kidneys. Persons with pre-existing skin

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disorders, eye problems or impaired kidney function may be more susceptible to the effects of these substances. Certain individuals (atopics), notably asthmatics, exhibit significant hyper-sensitivity to salicylic acid derivatives. Reactions include urticaria and other skin eruptions, rhinitis and severe (even fatal) bronchospasm and dyspnea. Chronic exposure to the p-hydroxybenzoates (parabens) is associated with hypersensitivity reactions following application of these to the skin. Hypersensitivity reactions have also been reported following parenteral or oral administration. Cross-sensitivity occurs between the p-hydroxybenzoates Hypersensitivity reactions may include by acute bronchospasm, hives (urticaria), deep dermal wheals (angioneurotic oedema), running nose (rhinitis) and blurred vision. Anaphylactic shock and skin rash (non- thrombocytopenic purpura) may also occur. Any individual may be predisposed to such anti-body mediated reaction if other chemical agents have caused prior sensitisation (cross-sensitivity).

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
polyethylene glycol	25322-68-3	<90
sodium salicylate	54-21-7	<10

## Section 4 - FIRST AID MEASURES

### SWALLOWED

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

### EYE

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- If pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- 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.

for salicylate intoxication:

- Pending gastric lavage, use emetics such as syrup of Ipecac or delay gastric emptying and absorption by swallowing a slurry of activated charcoal. Do not give ipecac after

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charcoal.

- Gastric lavage with water or perhaps sodium bicarbonate solution (3%-5%). Mild alkali delays salicylate absorption from the stomach and perhaps slightly from the duodenum.
- Saline catharsis with sodium or magnesium sulfate (15-30 gm in water).
- Take an immediate blood sample for an appraisal of the patient's acid-base status. A pH determination on an anaerobic sample of arterial blood is best. An analysis of the plasma salicylate concentration should be made at the same time. Laboratory controls are almost essential for the proper management of severe salicylism.
- In the presence of an established acidosis, alkali therapy is essential, but at least in an adult, alkali should be withheld until its need is demonstrated by chemical analysis. The intensity of treatment depends on the intensity of acidosis. In the presence of vomiting, intravenous sodium bicarbonate is the most satisfactory of all alkali therapy.
- Correct dehydration and hypoglycaemia (if present) by the intravenous administration of glucose in water or in isotonic saline. The administration of glucose may also serve to remedy ketosis which is often seen in poisoned children.
- Even in patients without hypoglycaemia, infusions of glucose adequate to produce distinct hyperglycaemia are recommended to prevent glucose depletion in the brain. This recommendation is based on impressive experimental data in animals.
- Renal function should be supported by correcting dehydration and incipient shock. Overhydration is not justified. An alkaline urine should be maintained by the administration of alkali if necessary with care to prevent a severe systemic alkalosis. As long as urine remains alkaline (pH above 7.5), administration of an osmotic diuretic such as mannitol or perhaps THAM is useful, but one must be careful to avoid hypokalaemia. Supplements of potassium chloride should be included in parenteral fluids.
- Small doses of barbiturates, diazepam, paraldehyde, or perhaps other sedatives (but probably not morphine) may be required to suppress extreme restlessness and convulsions.
- For hyperpyrexia, use sponge baths.

The presence of petechiae or other signs of haemorrhagic tendency calls for a large Vitamin K dose and perhaps ascorbic acid. Minor transfusions may be necessary since bleeding in salicylism is not always due to a prothrombin effect.

- Haemodialysis and haemoperfusion have proved useful in salicylate poisoning, as have peritoneal dialysis and exchange transfusions, but alkaline diuretic therapy is probably sufficient except in fulminating cases.

[GOSSELIN, et.al.: Clinical Toxicology of Commercial Products]

The mechanism of the toxic effect involves metabolic acidosis, respiratory alkalosis, hypoglycaemia, and potassium depletion. Salicylate poisoning is characterised by extreme acid-base disturbances, electrolyte disturbances and decreased levels of consciousness.

There are differences between acute and chronic toxicity and a varying clinical picture which is dependent on the age of the patient and their kidney function. The major feature of poisoning is metabolic acidosis due to "uncoupling of oxidative phosphorylation" which produces an increased metabolic rate, increased oxygen consumption, increased formation of carbon dioxide, increased heat production and increased utilisation of glucose. Direct stimulation of the respiratory centre leads to hyperventilation and respiratory alkalosis. This leads to compensatory increased renal excretion of bicarbonate which contributes to the metabolic acidosis which may coexist or develop subsequently.

Hypoglycaemia may occur as a result of increased glucose demand, increased rates of tissue glycolysis, and impaired rate of glucose synthesis. NOTE: Tissue glucose levels may be lower than plasma levels. Hyperglycaemia may occur due to increased glycogenolysis. Potassium depletion occurs as a result of increased renal excretion as well as intracellular movement of potassium.

Salicylates competitively inhibit vitamin K dependent synthesis of factors II, VII, IX, X and in addition, may produce a mild dose dependent hepatitis. Salicylates are bound to albumin. The extent of protein binding is concentration dependent (and falls with higher blood levels). This, and the effects of acidosis, decreasing ionisation, means that the volume of distribution increases markedly in overdose as does CNS penetration. The extent of protein binding (50-80%) and the rate of metabolism are concentration dependent. Hepatic clearance has zero order kinetics and thus the therapeutic half-life of 2-4.5 hours but the half-life in overdose is 18-36 hours. Renal excretion is the most important

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route in overdose. Thus when the salicylate concentrations are in the toxic range there is increased tissue distribution and impaired clearance of the drug.  
HyperTox 3.0 <http://www.ozemail.com.au/-ouad/SALI0001.HTA>.

## Section 5 - FIRE FIGHTING MEASURES

Flash Point (°F): Not Applicable  
Lower Explosive Limit (%): Not Applicable  
Upper Explosive Limit (%): Not Applicable  
Autoignition Temp (°F): Not Applicable

### EXTINGUISHING MEDIA

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

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

### GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- 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 (CO<sub>2</sub>), other pyrolysis products typical of burning organic material.

May emit poisonous fumes.

May emit corrosive fumes.

### 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.

Chemical goggles.

Gloves:

PVC chemical resistant type.

Respirator:

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### 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.

### MAJOR SPILLS

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

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## Section 7 - HANDLING AND STORAGE

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### PROCEDURE FOR HANDLING

DO NOT allow clothing wet with material to stay in contact with skin.

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.

### RECOMMENDED STORAGE METHODS

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

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## 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.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	polyethylene glycol (Respirable size+)		3		6			
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	polyethylene glycol (Particulates, NOC++)		10		20			
Canada - British Columbia Occupational Exposure Limits	polyethylene glycol (Particles Insoluble or Poorly Soluble) Not Otherwise Classified (PNOC))		10					

The following materials had no OELs on our records

- sodium salicylate: CAS:54- 21- 7

### MATERIAL DATA

Not available. Refer to individual constituents.

### INGREDIENT DATA

POLYETHYLENE GLYCOL:

continued...

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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.

SODIUM SALICYLATE:

CEL TWA: 5 mg/m<sup>3</sup> [as analogue for aspirin]

### 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].

#### HANDS/FEET

Wear chemical protective gloves, eg. PVC.

Wear safety footwear or safety gumboots, eg. Rubber.

NOTE: The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.

Suitability and durability of glove type is dependent on usage. Factors such as:

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

are important in the selection of gloves.

#### OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

Use appropriate NIOSH-certified respirator based on informed professional judgement. In conditions where no reasonable estimate of exposure can be made, assume the exposure is in a concentration IDLH and use NIOSH-certified full face pressure demand SCBA with a minimum service life of 30 minutes, or a combination full facepiece pressure demand SAR with auxiliary self-contained air supply. Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

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### 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.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Liquid.  
Mixes with water.

Molecular Weight: Not Applicable

Melting Range (°F): Not Available

Solubility in water (g/L): Miscible

pH (1% solution): Not Available

Volatile Component (%vol): Not Available

Relative Vapor Density (air=1): Not Available

Lower Explosive Limit (%): Not Applicable

Autoignition Temp (°F): Not Applicable

State: Liquid

Boiling Range (°F): Not Available

Specific Gravity (water= 1): 1.152

pH (as supplied): 8.3

Vapor Pressure (mmHg): Not Available

Evaporation Rate: Not Available

Flash Point (°F): Not Applicable

Upper Explosive Limit (%): Not Applicable

Decomposition Temp (°F): Not Available

Viscosity: Not Available

### APPEARANCE

Reddish-orange liquid with a mild odour; mixes with water.

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

### STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.

## Section 11 - TOXICOLOGICAL INFORMATION

### Liquid Ammonia Test Solution #1

### TOXICITY AND IRRITATION

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 a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

POLYETHYLENE GLYCOL:

TOXICITY

Oral (rat) LD50: 33750 mg/kg

for molecular weights (200-8000) \*

IRRITATION

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

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

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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

\* AIHA WEEL Guides

## SODIUM SALICYLATE:

### TOXICITY

Oral (human) LDLo: 700 mg/kg  
Oral (rat) LD50: 1200 mg/kg  
Intraperitoneal (rat) LD50: 542 mg/kg  
Subcutaneous (rat) LD50: 980 mg/kg

### IRRITATION

Nil Reported

Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

## Section 12 - ECOLOGICAL INFORMATION

DO NOT discharge into sewer or waterways.  
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

## Section 13 - DISPOSAL CONSIDERATIONS

### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

DO NOT allow wash water from cleaning or process equipment to enter drains.

It may be necessary to collect all wash water for treatment before disposal.

In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority.

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction,
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

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## Section 14 - TRANSPORTATION INFORMATION

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

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## Section 15 - REGULATORY INFORMATION

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### REGULATIONS

polyethylene glycol (CAS: 25322-68-3) is found on the following regulatory lists;  
Canada - British Columbia Occupational Exposure Limits  
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits  
Canada Domestic Substances List (DSL)  
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 Food Additive Database  
US Premarket Notifications for Food Contact Substances  
US Toxic Substances Control Act (TSCA) - Inventory

sodium salicylate (CAS: 54-21-7) is found on the following regulatory lists;  
Canada Domestic Substances List (DSL)  
Canada Environmental Quality Guidelines (EQGs) Water: Aquatic life  
IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances  
US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List  
US Cosmetic Ingredient Review (CIR) Cosmetic ingredients found safe, with qualifications  
US DOE Temporary Emergency Exposure Limits (TEELs)  
US EPA High Production Volume Program Chemical List  
US Toxic Substances Control Act (TSCA) - Inventory

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## Section 16 - OTHER INFORMATION

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### LIMITED EVIDENCE

Ingestion may produce health damage\*.  
Cumulative effects may result following exposure\*.  
Possible respiratory sensitiser\*.  
Possible skin sensitiser\*.  
May be harmful to the foetus/ embryo\*.  
\* (limited evidence).

### EXPOSURE STANDARD FOR MIXTURES

"Worst Case" computer-aided prediction of spray/ mist or fume/ dust components and concentration:

Composite Exposure Standard for Mixture (TWA) :5 mg/m<sup>3</sup>.

Operations which produce a spray/mist or fume/dust, introduce particulates to the breathing zone.

If the breathing zone concentration of ANY of the components listed below is exceeded,

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"Worst Case" considerations deem the individual to be overexposed.

Component	Breathing Zone ppm	Breathing Zone mg/m <sup>3</sup>	Mixture Conc (%)
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Component	Breathing Zone (mg/m <sup>3</sup> )	Mixture Conc (%)
sodium salicylate	5.0000	10.0

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# LIQUID AMMONIA TEST SOLUTION #2

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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

LIQUID AMMONIA TEST SOLUTION #2

### STATEMENT OF HAZARDOUS NATURE

**CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.**

### SUPPLIER

Company: Aquarium Pharmaceuticals Incorporated  
Address:  
50 East Hamilton Street  
Chalfont  
PA, 18914  
USA  
Telephone: +1 215 822 8181

Company: Aquarium Pharmaceuticals Incorporated  
Address:  
PO Box 218  
Chalfont  
PA, 18914-0218  
USA  
Telephone: +1 215 822 8181  
Emergency Tel: +1800 222 1222 (US Only)

### PRODUCT USE

Ammonia test solution for product LR8600, 34 and 401M.

### SYNONYMS

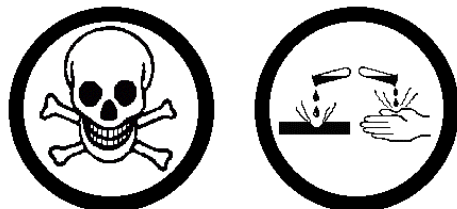
"Solution ID# 3335B"

## Section 2 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
sodium hydroxide	1310-73-2	<10
sodium hypochlorite	7681-52-9	<1

## Section 3 - HAZARDS IDENTIFICATION

### CANADIAN WHMIS SYMBOLS



### EMERGENCY OVERVIEW

#### RISK

Causes severe burns.  
Risk of serious damage to eyes.  
Harmful to aquatic organisms.  
Ingestion may produce health damage\*.  
\*(limited evidence)

continued...

# LIQUID AMMONIA TEST SOLUTION #2

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Section 3 - HAZARDS IDENTIFICATION

Cumulative effects may result following exposure\*.

## POTENTIAL HEALTH EFFECTS

### ACUTE HEALTH EFFECTS

#### SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual.

The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion.

Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swellings of the mucous membranes, profuse saliva production, with an inability to speak or swallow. Both the esophagus and stomach may experience burning pain; vomiting and diarrhea may follow. Epiglottal swelling may result in respiratory distress and asphyxia; shock can occur. Narrowing of the esophagus, stomach or stomach valve may occur immediately or after a long delay (weeks to years). Severe exposure can perforate the esophagus or stomach leading to infections of the chest or abdominal cavity, with low chest pain, abdominal stiffness and fever. All of the above can cause death.

#### EYE

The material can produce severe chemical burns to the eye following direct contact. Vapors or mists may be extremely irritating.

If applied to the eyes, this material causes severe eye damage.

Direct eye contact with corrosive bases can cause pain and burns. There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris. Mild cases often resolve; severe cases can be prolonged with complications such as persistent swelling, scarring, permanent cloudiness, bulging of the eye, cataracts, eyelids glued to the eyeball and blindness.

#### SKIN

The material can produce severe chemical burns following direct contact with the skin.

Skin contact with alkaline corrosives may produce severe pain and burns; brownish stains may develop. The corroded area may be soft, gelatinous and necrotic; tissue destruction may be deep.

Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

#### INHALED

If inhaled, this material can irritate the throat and lungs of some persons.

Inhaling corrosive bases may irritate the respiratory tract. Symptoms include cough, choking, pain and damage to the mucous membrane. In severe cases, lung swelling may develop, sometimes after a delay of hours to days. There may be low blood pressure, a weak and rapid pulse, and crackling sounds.

#### CHRONIC HEALTH EFFECTS

Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis. Substance

continued...

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Section 3 - HAZARDS IDENTIFICATION

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accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

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## Section 4 - FIRST AID MEASURES

---

### SWALLOWED

- For advice, contact a Poisons Information Center or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

### EYE

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Center or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

If skin or hair contact occurs:

- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Center.
- Transport to hospital, or doctor.

### INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.

### NOTES TO PHYSICIAN

For acute or short-term repeated exposures to highly alkaline materials:

- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- Unless endotracheal intubation can be accomplished under direct vision,

continued...

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Section 4 - FIRST AID MEASURES

cricothyroidotomy or tracheotomy may be necessary.  
- Oxygen is given as indicated.  
- The presence of shock suggests perforation and mandates an intravenous line and fluid administration.  
- Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilization of proteins allow deep penetration into the tissue.  
Alkalis continue to cause damage after exposure.

### INGESTION:

- Milk and water are the preferred diluents  
No more than 2 glasses of water should be given to an adult.  
- Neutralizing agents should never be given since exothermic heat reaction may compound injury.  
\* Catharsis and emesis are absolutely contra-indicated.  
\* Activated charcoal does not absorb alkali.  
\* Gastric lavage should not be used.

Supportive care involves the following:

- Withhold oral feedings initially.  
- If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.  
- Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.  
- Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

### SKIN AND EYE:

- Injury should be irrigated for 20-30 minutes.  
- Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology].

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## Section 5 - FIRE FIGHTING MEASURES

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Flash Point (°F): Not Applicable  
Lower Explosive Limit (%): Not Applicable  
Upper Explosive Limit (%): Not Applicable  
Autoignition Temp (°F): Not Applicable

### EXTINGUISHING MEDIA

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

### FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.  
- Wear full body protective clothing with breathing apparatus.  
- Prevent, by any means available, spillage from entering drains or water course.  
- Use fire fighting procedures suitable for surrounding area.  
- DO NOT approach containers suspected to be hot.  
- Cool fire exposed containers with water spray from a protected location.  
- If safe to do so, remove containers from path of fire.  
- Equipment should be thoroughly decontaminated after use.

continued...

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Section 5 - FIRE FIGHTING MEASURES

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 2625 feet in all directions.

## GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Non combustible.
  - Not considered to be a significant fire risk, however containers may burn.
- May emit corrosive fumes.

## FIRE INCOMPATIBILITY

None known.

## Section 6 - ACCIDENTAL RELEASE MEASURES

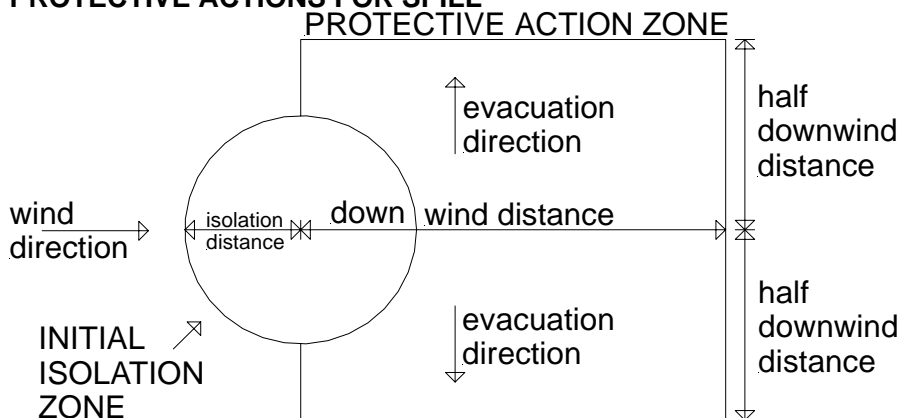
### MINOR SPILLS

- Clean up all spills immediately.
- Avoid breathing vapors 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 labeled container for waste disposal.

### MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labeled containers for recycling.
- Neutralize/decontaminate residue.
- Collect solid residues and seal in labeled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

### PROTECTIVE ACTIONS FOR SPILL



From IERG (Canada/Australia)

continued...

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Section 6 - ACCIDENTAL RELEASE MEASURES

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Isolation Distance	25 meters
Downwind Protection Distance	250 meters

## FOOTNOTES

- 1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.
- 2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and working away from the site in the downwind direction. Within the protective action zone a level of vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated and unable to take protective action and/or incurring serious or irreversible health effects.
- 3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a high probability of localised wind reversal may expose nearly all persons without appropriate protection to life-threatening concentrations of the material.
- 4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrican or box with inner containers). Larger packages leaking less than 200 litres and compressed gas leaking from a small cylinder are also considered "small spills".  
LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a "one-tonne" compressed gas cylinder.
- 5 Guide 154 is taken from the US DOT emergency response guide book.
- 6 IERG information is derived from CANUTEC - Transport Canada.

## ACUTE EXPOSURE GUIDELINE LEVELS (AEGL) (in ppm)

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

## EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

sodium hydroxide	50 mg/m <sup>3</sup>
sodium hypochlorite	500 mg/m <sup>3</sup>

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

continued...

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Section 6 - ACCIDENTAL RELEASE MEASURES

sodium hydroxide 5 mg/m<sup>3</sup>  
sodium hypochlorite 500 mg/m<sup>3</sup>

other than mild, transient adverse effects  
without perceiving a clearly defined odour is:

sodium hydroxide 0.5 mg/m<sup>3</sup>  
sodium hypochlorite 75 mg/m<sup>3</sup>

The threshold concentration below which most people  
will experience no appreciable risk of health effects:

sodium hydroxide 0.5 mg/m<sup>3</sup>  
sodium hypochlorite 25 mg/m<sup>3</sup>

American Industrial Hygiene Association (AIHA)

Ingredients considered according exceed the following cutoffs

Very Toxic (T+) >= 0.1%	Toxic (T) >= 3.0%
R50 >= 0.25%	Corrosive (C) >= 5.0%
R51 >= 2.5%	
else >= 10%	

where percentage is percentage of ingredient found in the mixture

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## Section 7 - HANDLING AND STORAGE

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### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
  - Wear protective clothing when risk of exposure occurs.
  - Use in a well-ventilated area.
  - WARNING: To avoid violent reaction, ALWAYS add material to water and NEVER water to material.
  - 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.
  - Launder contaminated clothing before re-use.
  - 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 are maintained.
- DO NOT allow clothing wet with material to stay in contact with skin.

### RECOMMENDED STORAGE METHODS

- Lined metal can, Lined metal pail/drum
- Plastic pail
- Polyliner drum
- Packing as recommended by manufacturer.
- Check all containers are clearly labeled and free from leaks.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure.

continued...

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Section 7 - HANDLING AND STORAGE

For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):

- Removable head packaging;
- Cans with friction closures and
- low pressure tubes and cartridges may be used.

Where combination packages are used, and the inner packages are of glass, porcelain or stoneware, there must be sufficient inert cushioning material in contact with inner and outer packages unless the outer packaging is a close fitting molded plastic box and the substances are not incompatible with the plastic.

## STORAGE REQUIREMENTS

- Store in original containers.
  - Keep containers securely sealed.
  - 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.
- DO NOT store near acids, or oxidizing agents.  
Protect containers against physical damage.  
Check regularly for spills and leaks.  
No smoking, naked lights, heat or ignition sources.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

US OSHA Permissible Exposure Levels ( PELs)

Z	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	Max excursion ppm	Max excursion mg/m <sup>3</sup>	Max excursion duration (mins)
Z1	Sodium hydroxide		2							

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>
US California Permissible Exposure Limits for Chemical Contaminants	Sodium hydroxide; caustic soda					--	2
US Minnesota Permissible Exposure Limits (PELs)	Sodium hydroxide						2
US Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	Sodium hydroxide		2				
US Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	Sodium hydroxide						2

continued...

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

US Tennessee Occupational Exposure Limits - Limits For Air Contaminants	Sodium hydroxide				2
Canada Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	Sodium hydroxide				2.00000
Canada Yukon Permissible Concentrations for Airborne Contaminant Substances	Sodium hydroxide	-	2	-	-
US Washington Permissible exposure limits of air contaminants	Sodium hydroxide				2
Canadian British Columbia Occupational Exposure Limits	Sodium hydroxide				2
NIOSH Recommended Exposure Limits for Hazardous Agents in the Workplace	Sodium hydroxide				2
US AIHA Workplace Environmental Exposure Levels (WEELs)	Sodium Hypochlorite				2
No data available: sodium hypochlorite as (CAS: 10022-70-5)					

Not available. Refer to individual constituents.

### EXPOSURE STANDARDS FOR MIXTURE

"Worst Case" computer-aided prediction of vapour components/concentrations:

"Worst Case" computer-aided prediction of vapour components/concentrations:  
 Composite Exposure Standard for Mixture (TWA) (mg/m<sup>3</sup>): 1.5 mg/m<sup>3</sup>

"Worst Case" computer-aided prediction of vapour components/concentrations:  
 Composite Exposure Standard for Mixture (TWA) (mg/m<sup>3</sup>):

If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed.  
 Component Breathing Zone ppm Breathing Zone mg/m<sup>3</sup> Mixture Conc: (%)

Component	Breathing zone (ppm)	Breathing Zone (mg/m <sup>3</sup> )	Mixture Conc (%)
sodium hypochlorite	0.50	1.5000	1.0

### INGREDIENT DATA

#### SODIUM HYDROXIDE:

The TLV-C is recommended based on concentrations that produce noticeable but not excessive, ocular and upper respiratory tract irritation.

#### SODIUM HYPOCHLORITE:

available chlorine, as chlorine  
 TLV TWA: 0.5 ppm, 1.5 mg/m<sup>3</sup>; STEL: 1 ppm, 2.9 mg/m<sup>3</sup>  
 ES Peak: 1 ppm, 3 mg/m<sup>3</sup>  
 CEL TWA: 2 mg/m<sup>3</sup> (compare WEEL TWA)

The odour threshold is likely to be similar to that of chlorine, 0.3 ppm.  
 Acute, subchronic, and chronic toxicity studies have shown no significant treatment related effects. High concentrations may produce moderate to

continued...

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

severe eye irritation, but not permanent injury. High doses also appear to be embryotoxic. Since nearly all sodium hypochlorite is handled as aqueous solution, airborne exposure is likely to be as an aerosol, or mist. Sodium hypochlorite dissociates in water to form free hypochlorous acid in equilibrium. The toxic effects are likely to be similar to those of chlorine or sodium hydroxide.

### PERSONAL PROTECTION

Glasses:  
Full face- shield.  
Gloves:  
PE/EVAL/PE Gloves.  
Respirator:  
Type B-P Filter of sufficient capacity

### EYE

- Chemical goggles.
- Full face shield.
- Contact lenses pose a special hazard; soft contact lenses may absorb irritants and all lenses concentrate them.

### HANDS/FEET

Elbow length PVC gloves.  
When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

### OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

### 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-1 P-	-
1000	50	-	B-1 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.

Use appropriate NIOSH-certified respirator based on informed professional judgement. In conditions where no reasonable estimate of exposure can be made, assume the exposure is in a concentration IDLH and use NIOSH-certified

continued...

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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full face pressure demand SCBA with a minimum service life of 30 minutes, or a combination full facepiece pressure demand SAR with auxiliary self-contained air supply. Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

### ENGINEERING CONTROLS

Local exhaust ventilation usually required. If risk of overexposure exists, wear an approved respirator. Correct fit is essential to obtain adequate protection an approved self contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area.

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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### PHYSICAL PROPERTIES

Liquid.  
Mixes with water.  
Corrosive.  
Alkaline.

Molecular Weight: Not Applicable  
Melting Range (°C): Not Available  
Solubility in water (g/L): Miscible  
pH (1% solution): Not Available  
Volatile Component (%vol): Not Available  
Relative Vapor Density (air=1): Not Available  
Lower Explosive Limit (%): Not Applicable  
Autoignition Temp (°C): Not Applicable  
State: Liquid

Boiling Range (°C): Not Available  
Specific Gravity (water=1): 1.099  
pH (as supplied): 13.3-13.9  
Vapor Pressure (kPa): Not Available  
Evaporation Rate: Not Available  
Flash Point (°C): Not Applicable  
Upper Explosive Limit (%): Not Applicable  
Decomposition Temp (°C): Not Available

### APPEARANCE

Clear alkaline liquid with a chlorine odor; mixes with water.

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## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

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### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerization will not occur.

### STORAGE INCOMPATIBILITY

Avoid strong acids.

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## Section 11 - TOXICOLOGICAL INFORMATION

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### Liquid Ammonia Test Solution #2

Not available. Refer to individual constituents.  
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

continued...

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## Section 11 - TOXICOLOGICAL INFORMATION

### SODIUM HYDROXIDE:

#### TOXICITY

Skin (rabbit): 500 mg/24h SEVERE  
Eye (rabbit): 0.05 mg/24h SEVERE  
Eye(rabbit):1 mg/24h SEVERE  
Eye(rabbit):1 mg/30s rinsed-SEVERE

#### IRRITATION

### SODIUM HYPOCHLORITE:

#### TOXICITY

Oral (mouse) LD50: 5800 mg/kg  
Oral (woman) TDLo: 1000 mg/kg  
as sodium hypochlorite pentahydrate  
Oral (rat) LD50: 8910 mg/kg  
Eye (rabbit): 100 mg - moderate

#### IRRITATION

Eye (rabbit): 10 mg - Moderate

Skin (rabbit): 500 mg/24h-moderate

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.

## Section 12 - ECOLOGICAL INFORMATION

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

DO NOT discharge into sewer or waterways.

Refer to data for ingredients, which follows:

### SODIUM HYDROXIDE:

Toxicity Fish: LC50(96)43mg/L

### SODIUM HYPOCHLORITE:

The material is classified as an ecotoxin\* because the Fish LC50 (96 hours) is less than or equal to 0.1 mg/l

\* Classification of Substances as Ecotoxic (Dangerous to the Environment)

Appendix 8, Table 1

Compiler's Guide for the Preparation of International Chemical Safety Cards:  
1993 Commission of the European Communities.

## Section 13 - DISPOSAL CONSIDERATIONS

### US EPA Waste Number & Descriptions

#### A. General Product Information

Corrosivity characteristic: use EPA hazardous waste number D002 (waste code C)

### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.
- Treat and neutralize at an approved treatment plant.
- Treatment should involve: Neutralization with suitable dilute acid followed

continued...

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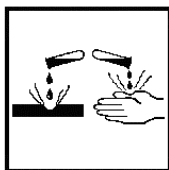
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Section 13 - DISPOSAL CONSIDERATIONS

by: Burial in a licensed land-fill or Incineration in a licensed apparatus (after admixture with suitable combustible material).  
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.  
Puncture containers to prevent re-use and bury at an authorized landfill.

## Section 14 - TRANSPORTATION INFORMATION

DOT Information  
Shipping Name: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.  
Hazard Class: 8  
SubRisk: None  
UN/NA Number: 3266  
Packing Group: II  
Labels Required: corrosive  
Additional Shipping Information:  
International Transport Regulations:  
IMO: 3266

## Section 15 - REGULATORY INFORMATION



### RISK

Causes severe burns.  
Risk of serious damage to eyes.  
Harmful to aquatic organisms.

### US Federal Regulations

#### A. General Product Information

In addition to Federal and State regulation, local regulations may apply. Check with your local regulatory authorities.

#### B. Component Information

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 455 Appendix A) SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4):

-----  
sodium hydroxide (1310-73-2, <10% )  
CERCLA: final RQ = 1000 pounds (454 kg)

-----  
sodium hypochlorite (7681-52-9, <1% )  
CERCLA: final RQ = 100 pounds (45.4 kg)

Component

TSCA

continued...

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sodium hydroxide Y  
sodium hypochlorite Y

## State Regulations

### A. General Product Information

### B. Component Information

The following components appear on one or more of the following state hazardous substance lists.

Component	CAS No	CA	FL	MA	MN	NJ	PA
sodium hydroxide	1310-73-2	Y	Y	Y	Y	Y	Y
sodium hypochlorite	7681-52-9	Y	N	Y	Y	N	Y

Y=Yes this material appears on that state's hazardous substances list.

N=No this material does not appear on that state's hazardous substances list.

## Other Regulations

### A. General Product Information

All components are listed in the European Inventory of New and Existing Chemical Substances (EINECS)

### B. Component Information

#### CANADA

The following component(s) are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS No	%	Min Conc.
sodium hydroxide	1310-73-2	<10	1% item 1442 (998)
sodium hypochlorite	7681-52-9	<1	1% item 1443 (1013)

All of this product's components are on the Canadian Domestic

## REGULATIONS

sodium hydroxide (CAS: 1310-73-2) is found on the following regulatory lists

Canadian Domestic Substances List (DSL)

US Toxic Substances Control Act (TSCA)

US EPA Hazardous Substances

US California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List

US CWA (Clean Water Act) - List of Hazardous Substances

US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances

US Minnesota Hazardous Substance List

US EPA High Production Volume Chemicals Additional List

US Food Additive Database

Canada Yukon Permissible Concentrations for Airborne Contaminant Substances

US Connecticut Hazardous Air Pollutants

Canadian Ingredient Disclosure List (SOR/88-64)

sodium hypochlorite (CAS: 7681-52-9) is found on the following regulatory lists

Canadian Domestic Substances List (DSL)

US Toxic Substances Control Act (TSCA)

US California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List

US CWA (Clean Water Act) - List of Hazardous Substances

US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances

continued...

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US Minnesota Hazardous Substance List  
Canadian Ingredient Disclosure List (SOR/88-64)  
US AIHA Workplace Environmental Exposure Levels (WEELs)  
US Food Additive Database  
US EPA Hazardous Substances  
Canadian National Pollutant Release Inventory (NPRI)  
US EPA High Production Volume Chemicals Additional List  
sodium hypochlorite (CAS: 10022-70-5) is found on the following regulatory lists  
Canadian Domestic Substances List (DSL)  
US Toxic Substances Control Act (TSCA)  
US California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List  
US CWA (Clean Water Act) - List of Hazardous Substances  
US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances  
US Minnesota Hazardous Substance List  
Canadian Ingredient Disclosure List (SOR/88-64)  
US DOE Temporary Emergency Exposure Limits (TEELs)  
US AIHA Workplace Environmental Exposure Levels (WEELs)  
US Food Additive Database  
US EPA Hazardous Substances  
Canadian National Pollutant Release Inventory (NPRI)  
US EPA High Production Volume Chemicals Additional List

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### Section 16 - OTHER INFORMATION

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