

Scroll down for all Safety Data Sheets (SDS) for this product.

Total Enclosures: 2



Simplicity in Water Analysis

Cover Page for Safety Data Sheet

Thank you for choosing CHEMetrics, Inc. We appreciate your business. In order to best serve your needs for accurate and complete Safety Data, we offer the following information as supplemental to the attached SDS.

SDS No.: R1501

Version No.: 2.4

Product Name: Ammonia CHEMets® & VACUettes® Refills and Ammonia Vacu-vials® Ampoules

Part Nos.: R-1501, R-1501A, R-1501B, R-1501C, R-1501D, K-1503 Ampoules, K-1523 Ampoules

Product Descriptions:

CHEMets Refills: Sealed glass ampoules, 7 mm OD, for visual colorimetric water analysis. Each CHEMet™ ampoule contains approximately 0.5 mL of liquid reagent sealed under vacuum. Refills contain 30 ampoules, test kits contain 1 refill.

VACUettes Refills: Sealed glass ampoules, 7 mm OD, with small glass capillary attached, for visual colorimetric water analysis. Each VACUette™ ampoule contains approximately 0.5 mL of liquid reagent sealed under vacuum. Refills contain 30 ampoules, test kits contain 1 refill.

Vacu-vials Ampoules: Sealed glass ampoules, 13 mm OD, for instrumental colorimetric water analysis. Each K-1503 Vacu-vial™ ampoule contains approximately 2 mL of liquid reagent sealed under vacuum. Each K-1523 Vacu-vial™ ampoule contains approximately 4.5 mL of liquid reagent sealed under vacuum. Test kits contain 30 ampoules.

Addendum to Section 14 Transport Information:

Shipping container markings and labels for this product, as received, may vary from the contents of section 14 of the SDS for one or both of the following reasons:

- CHEMetrics has packaged this product as Dangerous Goods in Excepted Quantities according to IATA, US DOT, and IMDG regulations.
- CHEMetrics has packaged this product as part of a test kit or reagent set composed of various chemical reagents and elected to ship as UN 3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

In case of reshipment, it is the responsibility of the shipper to determine appropriate labels and markings in accordance with applicable transportation regulations.

Additional Information:

- "Print Date" = Revision Date (expressed as DD/MM/YYYY)
- Test kits and reagents sets may contain additional chemical reagents. See separate SDS(s).

CHEMets®, VACUettes®, Vacu-vials®, and Titrets® are registered trademarks of CHEMetrics Inc.



Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules

CHEMetrics, Inc.

Chemwatch Hazard Alert Code: 4

Chemwatch: 9-89020

SDS No: R1501

Version No: 2.4

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: 08/10/2014

Print Date: 12/03/2015

Initial Date: 10/10/2014

S.GHS.USA.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules
Synonyms	Part Nos.: R-1501, R-1501A, R-1501B, R-1501C, R-1501D, K-1503 Ampoules, K-1523 Ampoules
Proper shipping name	Corrosive liquids, n.o.s. (contains sodium hydroxide and mercuric iodide)
Chemical formula	Not Applicable
Other means of identification	Not Available
CAS number	Not Applicable

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Component of water analysis test kits K-1503, K-1510, K-1510A, K-1510B, K-1510C, K-1510D, K-1523
--------------------------	--

Details of the manufacturer/importer

Registered company name	CHEMetrics, Inc.
Address	4295 Catlett Road, Midland, VA. 22728 United States
Telephone	1-540-788-9026
Fax	1-540-788-4856
Website	www.chemetrics.com
Email	technical@chemetrics.com

Emergency telephone number

Association / Organisation	ChemTel Inc.
Emergency telephone numbers	1-800-255-3924
Other emergency telephone numbers	+01-813-248-0585

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification	Metal Corrosion Category 1, Acute Toxicity (Oral) Category 2, Acute Toxicity (Dermal) Category 1, Acute Toxicity (Inhalation) Category 1, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1, Respiratory Sensitizer Category 1, Skin Sensitizer Category 1, STOT - SE (Resp. Irr.) Category 3, STOT - RE Category 2, Chronic Aquatic Hazard Category 3
--------------------	---

Label elements

GHS label elements	
--------------------	--

SIGNAL WORD DANGER

Hazard statement(s)

H290	May be corrosive to metals
H300	Fatal if swallowed
H310	Fatal in contact with skin
H330	Fatal if inhaled
H314	Causes severe skin burns and eye damage

Continued...

Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules

H318	Causes serious eye damage
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H317	May cause an allergic skin reaction
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure
H412	Harmful to aquatic life with long lasting effects

Precautionary statement(s) Prevention

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P262	Do not get in eyes, on skin, or on clothing.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Precautionary statement(s) Storage

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration
------	--

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
7732-18-5	92-96	water
1310-73-2	1-3	sodium hydroxide
1303-96-4	1-2	sodium borate, decahydrate
7774-29-0	1-2	mercuric iodide
7681-11-0	1	potassium iodide

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	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 Centre 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 Contact	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 Centre. ▶ Transport to hospital, or doctor.
Inhalation	▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses 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. ▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. ▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).

Continued...

Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules

	- As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. - Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. This must definitely be left to a doctor or person authorised by him/her. (ICSC13719)
Ingestion	- For advice, contact a Poisons Information Centre 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.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
for corrosives:

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for pulmonary oedema.
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.
- Where eyes have been exposed, flush immediately with water and continue to irrigate with normal saline during transport to hospital.
- DO NOT use emetics.** Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- Skin burns should be covered with dry, sterile bandages, following decontamination.
- DO NOT attempt neutralisation as exothermic reaction may occur.**

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

- Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime.
- Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- Consider endoscopy to evaluate oral injury.
- Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L. EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

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

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.
----------------------	-------------

Advice for firefighters

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 fire fighting procedures suitable for surrounding area. Do not approach containers suspected to be hot.
Fire/Explosion Hazard	- Non combustible. - Not considered a significant fire risk, however containers may burn.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	- Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. - Check regularly for spills and leaks. - Clean up all spills immediately. - Avoid breathing vapours and contact with skin and eyes.
--------------	--

Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules

	▶ Control personal contact with the substance, by using protective equipment.
Major Spills	▶ Clear area of personnel and move upwind. ▶ 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. ▶ Consider evacuation (or protect in place).
	Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe 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. Wear impact- and splash-resistant eyewear. Break the ampoule tip only when it is completely immersed in sample. Breaking the tip in air may cause the glass ampoule to shatter.
Other information	▶ 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. For optimum analytical performance, store in the dark and at room temperature.

Conditions for safe storage, including any incompatibilities

Suitable container	▶ Lined metal can, lined metal pail/ can. ▶ Plastic pail. ▶ Polyliner drum. ▶ Packing as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Levels (PELs) - Table Z1	sodium hydroxide	Sodium hydroxide	2 mg/m3	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	sodium hydroxide	Sodium hydroxide	Not Available	Not Available	2 mg/m3	TLV® Basis: URT, eye, & skin irr
US NIOSH Recommended Exposure Limits (RELs)	sodium hydroxide	Caustic soda, Lye, Soda lye, Sodium hydrate	Not Available	Not Available	2 mg/m3	Not Available
US ACGIH Threshold Limit Values (TLV)	sodium borate, decahydrate	Borate compounds, inorganic	2 mg/m3	6 mg/m3	Not Available	TLV® Basis: URT irr
US NIOSH Recommended Exposure Limits (RELs)	sodium borate, decahydrate	Borax, Borax decahydrate, Sodium borate decahydrate, Sodium tetraborate decahydrate	5 mg/m3	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	sodium borate, decahydrate	Anhydrous borax, Borax dehydrated, Disodium salt of boric acid, Disodium tetraborate, Fused borax, Sodium borate (anhydrous), Sodium tetraborate	1 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Levels (PELs) - Table Z1	mercuric iodide	Mercury	Not Available	Not Available	Not Available	See Table Z-2;(as Hg);(aryl and inorganic)
US ACGIH Threshold Limit Values (TLV)	mercuric iodide	Mercury, all forms except alkyl, as Hg - Elemental and inorganic forms	0.025 mg/m3	Not Available	Not Available	TLV® Basis: CNS impair; kidney dam; BEI
US ACGIH Threshold Limit Values (TLV)	potassium iodide	Iodine and Iodides - Iodides	0.01 ppm	0.1 ppm	Not Available	TLV® Basis: Hypothyroidism; URT irr

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
sodium hydroxide	Sodium hydroxide	Not Available	Not Available	Not Available
sodium borate, decahydrate	Sodium borate decahydrate	6 mg/m3	22 mg/m3	780 mg/m3
sodium borate, decahydrate	Sodium borate; (Disodium tetraborate; Borates, tetrasodium salts)	6 mg/m3	6 mg/m3	240 mg/m3
mercuric iodide	Mercuric iodide; (Mercury(II) iodide)	0.057 mg/m3	0.23 mg/m3	63 mg/m3

Continued...

Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules

potassium iodide	Potassium iodide	0.18 mg/m3	1.9 mg/m3	140 mg/m3
Ingredient	Original IDLH	Revised IDLH		
water	Not Available	Not Available		
sodium hydroxide	250 mg/m3	10 mg/m3		
sodium borate, decahydrate	Not Available	Not Available		
mercuric iodide	28 mg/m3	10 mg/m3		
potassium iodide	Not Available	Not Available		

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly.
Personal protection	
Eye and face protection	▶ Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure. ▶ Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. ▶ Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection. ▶ Alternatively a gas mask may replace splash goggles and face shields. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.
Skin protection	See Hand protection below
Hands/feet protection	▶ Elbow length PVC gloves ▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. 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. ▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.
Body protection	See Other protection below
Other protection	▶ Overalls. ▶ PVC Apron. ▶ PVC protective suit may be required if exposure severe. ▶ Eyewash unit. ▶ Ensure there is ready access to a safety shower.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-**

generated selection:

Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules

Material	CPI
BUTYL	C
NAT+NEOPR+NITRILE	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PE	C
PE/EVAL/PE	C
PVA	C
PVC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
TEFLON	C
VITON	C
VITON/CHLOROBUTYL	C

Respiratory protection

Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Pale yellow		
Physical state	Liquid	Relative density (Water = 1)	1.1
Odour	Odourless	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	13.5	Decomposition temperature	Not Available
Melting point / freezing point (°C)	0	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	100	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Miscible	pH as a solution	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce severely toxic effects; these may be fatal. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
Ingestion	Severely toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 5 gram may be fatal or may produce serious damage to the health of the individual. The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion.
Skin Contact	Skin contact with the material may produce severely toxic effects; systemic effects may result following absorption and these may be fatal. The material can produce severe chemical burns following direct contact with the skin. Open cuts, abraded or irritated skin should not be exposed to this material. 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.
Eye	The material can produce severe chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. If applied to the eyes, this material causes severe eye damage.
Chronic	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. Substance accumulation, in the human body, is likely and may cause some concern following repeated or long-term occupational exposure. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.

Continued...

Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules

Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules	TOXICITY	IRRITATION
Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules	TOXICITY	IRRITATION

WATER	No significant acute toxicological data identified in literature search.
SODIUM HYDROXIDE	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause severe 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. Repeated exposures may produce severe ulceration. Asthma-like symptoms may continue for months or even years after exposure to the material ceases.
SODIUM BORATE, DECAHYDRATE	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. Oral (rat) LD50: 4500-5000 mg/kg Eyes (rabbit) (-) Mild [Orica BORAX-Europe] Reproductive effector in rats Mutagenic towards bacteria
MERCURIC IODIDE	Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis). Dyspnae, diarrhoea, nausea and vomiting, foetotoxicity and teratogenesis recorded.
Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules, POTASSIUM IODIDE	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important.

Acute Toxicity	✓	Carcinogenicity	⊖
Skin Irritation/Corrosion	✓	Reproductivity	⊖
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	✓
Mutagenicity	⊖	Aspiration Hazard	⊖

Legend: ✓ – Data required to make classification available
 ✗ – Data available but does not fill the criteria for classification
 ⊖ – Data Not Available to make classification

CMR STATUS

CARCINOGEN	mercuric iodide	US Environmental Defense Scorecard Suspected Carcinogens	P65-MC
EYE	sodium hydroxide	US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) - Eye	X SODIUM HYDROXIDE
RESPIRATORY	sodium hydroxide	US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) - Respiratory	X
SKIN	sodium hydroxide	US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) - Skin	X
	mercuric iodide	US - Hawaii Air Contaminant Limits - Skin Designation US - Washington Permissible exposure limits of air contaminants - Skin US - Michigan Exposure Limits for Air Contaminants - Skin US - Alaska Limits for Air Contaminants - Skin Designation US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants - Skin US ACGIH Threshold Limit Values (TLV) - Skin US - California Permissible Exposure Limits for Chemical Contaminants - Skin US - North Carolina Permissible Exposure Limits (PELs) for Air Contaminants - Skin Designation [NLV] US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants - Skin US - Minnesota Permissible Exposure Limits (PELs) - Skin	X Yes S

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
 Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
 Prevent, by any means available, spillage from entering drains or water courses.

Continued...

Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
water	LOW	LOW
sodium hydroxide	LOW	LOW
potassium iodide	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
water	LOW (LogKOW = -1.38)
sodium hydroxide	LOW (LogKOW = -3.8796)
potassium iodide	LOW (LogKOW = 0.0436)

Mobility in soil

Ingredient	Mobility
water	LOW (KOC = 14.3)
sodium hydroxide	LOW (KOC = 14.3)
potassium iodide	LOW (KOC = 14.3)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	Dispose of according to federal, state, and local regulations.
------------------------------	--

SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	NO

Land transport (DOT)

UN number	1760
Packing group	II
UN proper shipping name	Corrosive liquids, n.o.s. (contains sodium hydroxide and mercuric iodide)
Environmental hazard	No relevant data
Transport hazard class(es)	Class : 8
Special precautions for user	Special provisions : B2, IB2, T11, TP2, TP27

Air transport (ICAO-IATA / DGR)

UN number	1760
Packing group	II
UN proper shipping name	Corrosive liquid, n.o.s. * (contains sodium hydroxide and mercuric iodide)
Environmental hazard	No relevant data
Transport hazard class(es)	ICAO/IATA Class : 8 ICAO / IATA Subrisk : Not Applicable ERG Code : 8L
Special precautions for user	Special provisions : A3A803 Cargo Only Packing Instructions : 855 Cargo Only Maximum Qty / Pack : 30 L Passenger and Cargo Packing Instructions : 851 Passenger and Cargo Maximum Qty / Pack : 1 L Passenger and Cargo Limited Quantity Packing Instructions : Y840 Passenger and Cargo Limited Maximum Qty / Pack : 0.5 L

Sea transport (IMDG-Code / GGVSee)

Ammonia CHEMets & VACUettes Refills and Ammonia Vacu-vials Ampoules

UN number	1760						
Packing group	II						
UN proper shipping name	CORROSIVE LIQUID, N.O.S. (contains sodium hydroxide and mercuric iodide)						
Environmental hazard	Not Applicable						
Transport hazard class(es)	<table> <tr> <td>IMDG Class</td><td>8</td></tr> <tr> <td>IMDG Subrisk</td><td>Not Applicable</td></tr> </table>	IMDG Class	8	IMDG Subrisk	Not Applicable		
IMDG Class	8						
IMDG Subrisk	Not Applicable						
Special precautions for user	<table> <tr> <td>EMS Number</td><td>F-A , S-B</td></tr> <tr> <td>Special provisions</td><td>274</td></tr> <tr> <td>Limited Quantities</td><td>1 L</td></tr> </table>	EMS Number	F-A , S-B	Special provisions	274	Limited Quantities	1 L
EMS Number	F-A , S-B						
Special provisions	274						
Limited Quantities	1 L						

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

water(7732-18-5) is found on the following regulatory lists	"US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
sodium hydroxide(1310-73-2) is found on the following regulatory lists	"US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Idaho - Limits for Air Contaminants","US - Hawaii Air Contaminant Limits","US - California Permissible Exposure Limits for Chemical Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Oregon Permissible Exposure Limits (Z-1)","US - Michigan Exposure Limits for Air Contaminants","US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values","US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)","US NIOSH Recommended Exposure Limits (RELs)","US - Alaska Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US - Minnesota Permissible Exposure Limits (PELs)","US ACGIH Threshold Limit Values (TLV)","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US OSHA Permissible Exposure Levels (PELs) - Table Z1"
sodium borate, decahydrate(1303-96-4) is found on the following regulatory lists	"US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Hawaii Air Contaminant Limits","US - California Permissible Exposure Limits for Chemical Contaminants","US ACGIH Threshold Limit Values (TLV) - Carcinogens","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Michigan Exposure Limits for Air Contaminants","US EPA Carcinogens Listing","US NIOSH Recommended Exposure Limits (RELs)","US - Alaska Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US - Minnesota Permissible Exposure Limits (PELs)","US ACGIH Threshold Limit Values (TLV)","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
mercuric iodide(7774-29-0) is found on the following regulatory lists	"US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Idaho - Limits for Air Contaminants","US - Hawaii Air Contaminant Limits","US - California Permissible Exposure Limits for Chemical Contaminants","US ACGIH Threshold Limit Values (TLV) - Carcinogens","US - California Proposition 65 - Reproductive Toxicity","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Michigan Exposure Limits for Air Contaminants","International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs","US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)","US - Alaska Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US Priority List for the Development of Proposition 65 Safe Harbor Levels - No Significant Risk Levels (NSRLs) for Carcinogens and Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity","US - Minnesota Permissible Exposure Limits (PELs)","US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)","US ACGIH Threshold Limit Values (TLV)","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US OSHA Permissible Exposure Levels (PELs) - Table Z1"
potassium iodide(7681-11-0) is found on the following regulatory lists	"US ACGIH Threshold Limit Values (TLV) - Carcinogens","US ACGIH Threshold Limit Values (TLV)","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

Name	CAS No
Not Available	Not Available
Not Available	Not Available

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.

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH. TEL (+61 3) 9572 4700.



Simplicity in Water Analysis

Cover Page for Safety Data Sheet

Thank you for choosing CHEMetrics, Inc. We appreciate your business. In order to best serve your needs for accurate and complete Safety Data, we offer the following information as supplemental to the attached SDS.

SDS No.: S1500

Version No.: 1.1

Product Name: Stabilizer Solutions for Ammonia CHEMets® and Vacu-vials® Kits

Part Nos.: A-1500, A-1501

Product Descriptions:

Stabilizer Solution: Plastic bottle containing liquid reagent. Each bottle of A-1500 solution contains approximately 9 mL of liquid reagent. Each bottle of A-1501 solution contains approximately 18 mL of liquid reagent. Test kits contain one bottle of A-1500 solution. Stabilizer Solution packs contain six (6) bottles of solution.

Addendum to Section 14 Transport Information:

Shipping container markings and labels for this product, as received, may vary from the contents of section 14 of the SDS for one or both of the following reasons:

- CHEMetrics has packaged this product as Dangerous Goods in Excepted Quantities according to IATA, US DOT, and IMDG regulations.
- CHEMetrics has packaged this product as part of a test kit or reagent set composed of various chemical reagents and elected to ship as UN 3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

In case of reshipment, it is the responsibility of the shipper to determine appropriate labels and markings in accordance with applicable transportation regulations.

Additional Information:

- "Print Date" = Revision Date (expressed as DD/MM/YYYY)
- Test kits and reagents sets may contain additional chemical reagents. See separate SDS(s).

CHEMets®, VACUettes®, Vacu-vials®, and Titrets® are registered trademarks of CHEMetrics Inc.



Stabilizer Solutions for Ammonia CHEMetrics and Vacu-vials Kits

CHEMetrics, Inc.

Chemwatch: 9-82029

SDS No: S1500

Version No: 1.1

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 2

Issue Date: 08/10/2014

Print Date: 12/03/2015

Initial Date: 09/10/2014

S.GHS.USA.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Stabilizer Solutions for Ammonia CHEMetrics and Vacu-vials Kits
Synonyms	Part Nos.: A-1500, A-1501
Proper shipping name	Not Applicable
Chemical formula	Not Applicable
Other means of identification	Not Available
CAS number	Not Applicable

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Components of water analysis test kits K-1503, K-1510, K-1523
--------------------------	---

Details of the manufacturer/importer

Registered company name	CHEMetrics, Inc.
Address	4295 Catlett Road, Midland, VA. 22728 United States
Telephone	1-540-788-9026
Fax	1-540-788-4856
Website	www.chemetrics.com
Email	technical@chemetrics.com

Emergency telephone number

Association / Organisation	ChemTel Inc.
Emergency telephone numbers	1-800-255-3924
Other emergency telephone numbers	+01-813-248-0585

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification	Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A
--------------------	--

Label elements

GHS label elements	
--------------------	---

SIGNAL WORD **WARNING**

Hazard statement(s)

H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation

Precautionary statement(s) Prevention

P101	If medical advice is needed, have product container or label at hand.
------	---

Continued...

Stabilizer Solutions for Ammonia CHEMets and Vacu-vials Kits

P102	Keep out of reach of children.
P103	Read label before use.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of water and soap
P330	Rinse mouth.

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration
-------------	--

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
1310-58-3	<1	potassium hydroxide
111-46-6	5	diethylene glycol
6381-59-5	27	potassium sodium tartrate
7732-18-5	>67	water

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	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. - Seek medical attention without delay; if pain persists or recurs seek medical attention. - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	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.
Inhalation	- If fumes, aerosols or combustion products are inhaled remove from contaminated area. - Other measures are usually unnecessary.
Ingestion	IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. - For advice, contact a Poisons Information Centre or a doctor. - Urgent hospital treatment is likely to be needed. - In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition. - If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist. - If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS. Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise: INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. NOTE: Wear a protective glove when inducing vomiting by mechanical means.

Indication of any immediate medical attention and special treatment needed

As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (airway, breathing, circulation, disability, exposure), then the ABCDEs of toxicology (antidotes, basics, change absorption, change distribution, change elimination).

For poisons (where specific treatment regime is absent):

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- Monitor and treat, where necessary, for pulmonary oedema.
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.

Continued...

Stabilizer Solutions for Ammonia CHEMets and Vacu-vials Kits

- ▶ **DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

ADVANCED TREATMENT

- ▶ Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- ▶ Positive-pressure ventilation using a bag-valve mask might be of use.
- ▶ Monitor and treat, where necessary, for arrhythmias.
- ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- ▶ Drug therapy should be considered for pulmonary oedema.
- ▶ Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- ▶ Treat seizures with diazepam.
- ▶ Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

	The product contains a substantial proportion of water, therefore there are no restrictions on the type of extinguishing media which may be used. Choice of extinguishing media should take into account surrounding areas. Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances. In such an event consider: ▶ foam. ▶ dry chemical powder.
--	--

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.
----------------------	-------------

Advice for firefighters

Fire Fighting	▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves in the event of a fire. ▶ Prevent, by any means available, spillage from entering drains or water courses. ▶ Use fire fighting procedures suitable for surrounding area. ▶ DO NOT approach containers suspected to be hot.
Fire/Explosion Hazard	▶ The material is not readily combustible under normal conditions. ▶ However, it will break down under fire conditions and the organic component may burn. ▶ Not considered to be a significant fire risk. ▶ Heat may cause expansion or decomposition with violent rupture of containers. ▶ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO).

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb spill with sand, earth, inert material or vermiculite. ▶ Wipe up.
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.
	Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	▶ 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. Wear impact- and splash-resistant eyewear.
Other information	For optimum analytical performance, store in the dark and at room temperature.

Conditions for safe storage, including any incompatibilities

Suitable container	▶ Polyethylene or polypropylene container. ▶ Packing as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	None known

Stabilizer Solutions for Ammonia CHEMets and Vacu-vials Kits

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US ACGIH Threshold Limit Values (TLV)	potassium hydroxide	Potassium hydroxide	Not Available	Not Available	2 mg/m3	TLV® Basis: URT, eye, & skin irr
US NIOSH Recommended Exposure Limits (RELs)	potassium hydroxide	Caustic potash, Lye, Potassium hydrate	Not Available	Not Available	2 mg/m3	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
potassium hydroxide	Potassium hydroxide	0.18 mg/m3	2 mg/m3	54 mg/m3
diethylene glycol	Diethylene glycol	6.9155 ppm	80 ppm	250 ppm
potassium sodium tartrate	Sodium potassium tartrate; (Potassium sodium tartrate)	3.2 mg/m3	36 mg/m3	210 mg/m3
potassium sodium tartrate	Sodium potassium tartrate tetrahydrate	3.2 mg/m3	36 mg/m3	210 mg/m3

Ingredient	Original IDLH	Revised IDLH
potassium hydroxide	Not Available	Not Available
diethylene glycol	Not Available	Not Available
potassium sodium tartrate	Not Available	Not Available
water	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly.
Personal protection	
Eye and face protection	- 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 lenses 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.
Skin protection	See Hand protection below
Hands/feet protection	- Wear chemical protective gloves, e.g. PVC. - Wear safety footwear or safety gumboots, e.g. Rubber The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Suitability and durability of glove type is dependent on usage.
Body protection	See Other protection below
Other protection	- Overalls. - P.V.C. apron. - Barrier cream. - Skin cleansing cream.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

Stabilizer Solutions for Ammonia CHEMets and Vacu-vials Kits

Material	CPI
BUTYL	A

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
------------------------------------	----------------------	----------------------	------------------------

Continued...

Stabilizer Solutions for Ammonia CHEMets and Vacu-vials Kits

NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NITRILE	C
NITRILE+PVC	C
PVA	C
PVC	C
VITON	C

up to 10 x ES	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
up to 50 x ES	-	A-AUS / Class 1 P2	-
up to 100 x ES	-	A-2 P2	A-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Colorless		
Physical state	Liquid	Relative density (Water = 1)	1.12
Odour	Odourless	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	8	Decomposition temperature	Not Available
Melting point / freezing point (°C)	10	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	104	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Miscible	pH as a solution	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

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
Ingestion	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

Continued...

Stabilizer Solutions for Ammonia CHEMets and Vacu-vials Kits

Skin Contact	This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Open cuts, abraded or irritated skin should not be exposed to this material 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.
Eye	This material can cause eye irritation and damage in some persons.
Chronic	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.

Stabilizer Solutions for Ammonia CHEMets and Vacu-vials Kits	TOXICITY	IRRITATION
Stabilizer Solutions for Ammonia CHEMets and Vacu-vials Kits	TOXICITY	IRRITATION

POTASSIUM HYDROXIDE	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.
DIETHYLENE GLYCOL	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.
Stabilizer Solutions for Ammonia CHEMets and Vacu-vials Kits, POTASSIUM SODIUM TARTRATE, WATER	No significant acute toxicological data identified in literature search.

Acute Toxicity	✓	Carcinogenicity	⊘
Skin Irritation/Corrosion	✓	Reproductivity	⊘
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	⊘
Respiratory or Skin sensitisation	⊘	STOT - Repeated Exposure	⊘
Mutagenicity	⊘	Aspiration Hazard	⊘

Legend: ✓ – Data required to make classification available
 ✗ – Data available but does not fill the criteria for classification
 ⊘ – Data Not Available to make classification

CMR STATUS

Not Applicable

SECTION 12 ECOLOGICAL INFORMATION**Toxicity****DO NOT** discharge into sewer or waterways.**Persistence and degradability**

Ingredient	Persistence: Water/Soil	Persistence: Air
diethylene glycol	LOW	LOW
water	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
diethylene glycol	LOW (BCF = 180)
water	LOW (LogKOW = -1.38)

Mobility in soil

Ingredient	Mobility
diethylene glycol	HIGH (KOC = 1)
water	LOW (KOC = 14.3)

SECTION 13 DISPOSAL CONSIDERATIONS

Continued...

Stabilizer Solutions for Ammonia CHEMets and Vacu-vials Kits

Waste treatment methods

Product / Packaging disposal	Dispose of according to federal, state, and local regulations.
------------------------------	--

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
------------------	----

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	potassium hydroxide	Y

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

potassium hydroxide(1310-58-3) is found on the following regulatory lists	"US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Hawaii Air Contaminant Limits","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Michigan Exposure Limits for Air Contaminants","US NIOSH Recommended Exposure Limits (RELs)","US - Alaska Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US - Minnesota Permissible Exposure Limits (PELs)","US ACGIH Threshold Limit Values (TLV)","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
diethylene glycol(111-46-6) is found on the following regulatory lists	"US AIHA Workplace Environmental Exposure Levels (WEELs)","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
potassium sodium tartrate(6381-59-5) is found on the following regulatory lists	"US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
water(7732-18-5) is found on the following regulatory lists	"US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

Name	CAS No
Not Available	Not Available

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.

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH. TEL (+61 3) 9572 4700.