



Multitreat-102

Parkway Process Solutions Pty Ltd T/A Multi-Wet

Chemwatch Hazard Alert Code: 4

Chemwatch: 36-3084

Version No: 6.1.16.10

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Issue Date: 20/08/2021

Print Date: 03/09/2021

S.GHS.AUS.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

| | |
|-------------------------------|--|
| Product name | Multitreat-102 |
| Chemical Name | Not Applicable |
| Synonyms | Not Available |
| Proper shipping name | CAUSTIC ALKALI LIQUID, N.O.S. (contains potassium hydroxide) |
| Chemical formula | Not Applicable |
| Other means of identification | Not Available |

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

| | |
|--------------------------|--|
| Relevant identified uses | Closed water system corrosion & inhibitor. |
|--------------------------|--|

Details of the supplier of the safety data sheet

| | |
|-------------------------|--|
| Registered company name | Parkway Process Solutions Pty Ltd T/A Multi-Wet |
| Address | Unit 1/36 Juna Drive, Malaga WA 6090 Australia |
| Telephone | 1300 727 5929 (1300 PARKWAY) |
| Fax | +618 9249 9339 |
| Website | www.pwnps.com |
| Email | solutions@pwnps.com |

Emergency telephone number

| Association / Organisation | Parkway Process Solutions Pty Ltd T/A Multi-Wet | CHEMWATCH EMERGENCY RESPONSE |
|-----------------------------------|---|------------------------------|
| Emergency telephone numbers | +61 2 9186 1132 | +61 2 9186 1132 |
| Other emergency telephone numbers | 1300 727 5929 (1300 PARKWAY) | +61 1800 951 288 |

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

ChemWatch Hazard Ratings

| | Min | Max | |
|--------------|-----|-----|--------------|
| Flammability | 0 | | |
| Toxicity | 4 | | 0 = Minimum |
| Body Contact | 3 | | 1 = Low |
| Reactivity | 2 | | 2 = Moderate |
| Chronic | 2 | | 3 = High |
| | | | 4 = Extreme |

| | |
|--------------------|---|
| Poisons Schedule | S6 |
| Classification [1] | Self-Reactive Substances and Mixtures Type A, Corrosive to Metals Category 1, Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 1B, Serious Eye Damage/Eye Irritation Category 1, Acute Toxicity (Inhalation) Category 1, Germ Cell Mutagenicity Category 2, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Acute Hazard Category 1 |
| Legend: | 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI |

Label elements

| | |
|---------------------|---|
| Hazard pictogram(s) |  |
|---------------------|---|

| | |
|-------------|---------------|
| Signal word | Danger |
|-------------|---------------|

Hazard statement(s)

| | |
|------|--|
| H240 | Heating may cause an explosion. |
| H290 | May be corrosive to metals. |
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H330 | Fatal if inhaled. |
| H341 | Suspected of causing genetic defects. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |

Precautionary statement(s) Prevention

| | |
|------|--|
| P201 | Obtain special instructions before use. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P234 | Keep only in original packaging. |
| P235 | Keep cool. |

Precautionary statement(s) Response

| | |
|----------------|--|
| 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 [or 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. |
| P411 | Store at temperatures not exceeding ...°C/...°F. |
| P420 | Store separately. |

Precautionary statement(s) Disposal

| | |
|------|--|
| P501 | Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation. |
|------|--|

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|---------------|-----------|--|
| 7632-00-0 | 10-25 | <u>sodium nitrite</u> |
| 64665-57-2 | 0.1-1 | <u>sodium tolyltriazole</u> |
| 1310-58-3 | 0.1-1 | <u>potassium hydroxide</u> |
| Not Available | balance | Ingredients determined not to be hazardous |

Legend: 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available

SECTION 4 First aid measures

Description of first aid measures

| | |
|---------------------|--|
| Eye Contact | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ 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 | <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ 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. |

| | |
|-------------------|--|
| | <ul style="list-style-type: none"> ▸ Transport to hospital, or doctor. |
| Inhalation | <ul style="list-style-type: none"> ▸ 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. ▸ 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). ▸ 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. <p>This must definitely be left to a doctor or person authorised by him/her. (ICSC13719)</p> |
| Ingestion | <ul style="list-style-type: none"> ▸ 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

Symptoms of vasodilation and reflex tachycardia may present following organic nitrate overdose; most organic nitrates are extensively metabolised by hydrolysis to inorganic nitrites. Organic nitrates and nitrites are readily absorbed through the skin, lungs, mucosa and gastro-intestinal tract.
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*

The toxicity of nitrates and nitrites result from their vasodilating properties and their propensity to form methaemoglobin.

- Most produce a peak effect within 30 minutes.
- Clinical signs of cyanosis appear before other symptoms because of the dark pigmentation of methaemoglobin.
- Initial attention should be directed towards improving oxygen delivery, with assisted ventilation, if necessary. Hyperbaric oxygen has not demonstrated conclusive benefits.
- Institute cardiac monitoring, especially in patients with coronary artery or pulmonary disease.
- Hypotension should respond to Trendelenburg's position and intravenous fluids; otherwise dopamine may be needed.
- Naloxone, glucose and thiamine should be given if a multiple ingestion is suspected.
- Decontaminate using Ipecac Syrup for alert patients or lavage for obtunded patients who present within 2-4 hours of ingestion.
- Symptomatic patients with methaemoglobin levels over 30% should receive methylene blue. (Cyanosis alone, is not an indication for treatment). The usual dose is 1-2 mg/kg of a 1% solution (10 mg/ml) IV over 5 minutes; repeat, using the same dose if symptoms of hypoxia fail to subside within 1 hour.

[Ellenhorn and Barceloux: Medical Toxicology]

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker who has been exposed at the Exposure Standard (ES or TLV):

| Determinant | Index | Sampling Time | Comments |
|----------------------------|---------------------|------------------------|----------|
| 1. Methaemoglobin in blood | 1.5% of haemoglobin | During or end of shift | B,NS,SQ |

B: Background levels occur in specimens collected from subjects **NOT** exposed

NS: Non-specific determinant;also observed after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

SECTION 5 Firefighting measures

Extinguishing media

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

Special hazards arising from the substrate or mixture

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

Advice for firefighters

| | |
|------------------------------|---|
| Fire Fighting | <ul style="list-style-type: none"> ▶ 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. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> ▶ Non combustible. ▶ Not considered a significant fire risk, however containers may burn. <p>Decomposes on heating and produces: WARNING: May EXPLODE on heating!!! carbon dioxide (CO₂) nitrogen oxides (NO_x) other pyrolysis products typical of burning organic material. May emit corrosive fumes.</p> |
| HAZCHEM | 2R |

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

| | |
|---------------------|--|
| Minor Spills | <p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> ▶ 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. ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| Major Spills | <p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> ▶ 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. |

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

SECTION 7 Handling and storage

Precautions for safe handling

| | |
|--------------------------|--|
| Safe handling | <ul style="list-style-type: none"> ▶ DO NOT allow clothing wet with material to stay in contact with skin ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Avoid contact with moisture. |
| Other information | <ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry, well-ventilated area. ▶ Store away from incompatible materials and foodstuff containers. |

Conditions for safe storage, including any incompatibilities

| | |
|---------------------------|--|
| Suitable container | <ul style="list-style-type: none"> ▶ Lined metal can, lined metal pail/ can. ▶ Plastic pail. ▶ Polyliner drum. ▶ Packing as recommended by manufacturer. <p>For low viscosity materials</p> <ul style="list-style-type: none"> ▶ 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. <p>For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):</p> <ul style="list-style-type: none"> ▶ Removable head packaging; |
|---------------------------|--|

| | |
|--------------------------------|--|
| | <ul style="list-style-type: none"> ▶ Cans with friction closures and ▶ low pressure tubes and cartridges may be used. |
| Storage incompatibility | <ul style="list-style-type: none"> ▶ Nitroaromatic and in particular polynitroaromatic compounds may present a severe explosion risk if subjected to shock or heated rapidly and uncontrollably as in fire situations. ▶ In addition, when such compounds are heated more moderately with caustic alkalies, even when water or organic solvents are present, there is also a risk of violent decomposition or explosion - several industrial accidents, which probably were due to such interactions, have occurred; this potential hazard often remains unacknowledged. ▶ Aromatic nitro compounds range from slight to strong oxidizing agents. If mixed with reducing agents, including hydrides, sulfides and nitrides, they may begin a vigorous reaction that culminates in a detonation. <p>for metal nitrates:</p> <ul style="list-style-type: none"> ▶ Segregate from heavy metals, phosphides, sodium acetate, lead nitrate, tartrates, trichloroethylene, ▶ Avoid shock and heat. ▶ Mixtures of metal nitrates with alkyl esters may explode due to the formation of unstable alkyl nitrates. ▶ Mixtures of a nitrate with phosphorous, tin(II) chloride and other reducing agents may react explosively. ▶ Mixtures containing nitrates and organic materials are potentially dangerous, especially if acidic materials or heavy metals are present. ▶ Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous ▶ Incidents involving interaction of active oxidants and reducing agents, either by design or accident, are usually very energetic and examples of so-called redox reactions. ▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. ▶ Avoid reaction with oxidising agents, bases and strong reducing agents. ▶ Avoid storage with reducing agents. |

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|------------------------------|---------------------|---------------------|---------------|---------------|---------|---------------|
| Australia Exposure Standards | potassium hydroxide | Potassium hydroxide | Not Available | Not Available | 2 mg/m3 | Not Available |

Emergency Limits

| Ingredient | TEEL-1 | TEEL-2 | TEEL-3 |
|----------------------|------------|----------|-----------|
| sodium nitrite | 6.4 mg/m3 | 71 mg/m3 | 240 mg/m3 |
| sodium tolyltriazole | 1.9 mg/m3 | 21 mg/m3 | 130 mg/m3 |
| potassium hydroxide | 0.18 mg/m3 | 2 mg/m3 | 54 mg/m3 |


| Ingredient | Original IDLH | Revised IDLH |
|----------------------|---------------|---------------|
| sodium nitrite | Not Available | Not Available |
| sodium tolyltriazole | Not Available | Not Available |
| potassium hydroxide | Not Available | Not Available |

Occupational Exposure Banding

| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|----------------------|-----------------------------------|----------------------------------|
| sodium nitrite | E | ≤ 0.01 mg/m ³ |
| sodium tolyltriazole | E | ≤ 0.01 mg/m ³ |

Notes: Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

Exposure controls

| | |
|---|---|
| Appropriate engineering controls | <p>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:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>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.</p> |
| Personal protection |  |
| Eye and face protection | <ul style="list-style-type: none"> ▶ Chemical goggles. ▶ Full face shield may be required for supplementary but never for primary protection of eyes. ▶ 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. |
| Skin protection | See Hand protection below |
| Hands/feet protection | <ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber ▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. <p>NOTE:</p> <ul style="list-style-type: none"> ▶ 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. <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to</p> |

| | |
|-------------------------|---|
| | 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. Personal hygiene is a key element of effective hand care. |
| Body protection | See Other protection below |
| Other protection | <ul style="list-style-type: none"> ▶ Overalls. ▶ PVC Apron. ▶ PVC protective suit may be required if exposure severe. ▶ Eyewash unit. |

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:

Multitreat-102

| Material | CPI |
|------------------|-----|
| BUTYL | A |
| NATURAL+NEOPRENE | A |
| NEOPRENE | A |
| NITRILE | A |
| NITRILE+PVC | A |
| PVC | A |
| NATURAL RUBBER | B |

* 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.

Respiratory protection

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

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.

| Required minimum protection factor | Maximum gas/vapour concentration present in air p.p.m. (by volume) | Half-face Respirator | Full-Face Respirator |
|------------------------------------|--|----------------------|----------------------|
| up to 10 | 1000 | A-AUS / Class1 | - |
| up to 50 | 1000 | - | A-AUS / Class 1 |
| up to 50 | 5000 | Airline * | - |
| up to 100 | 5000 | - | A-2 |
| up to 100 | 10000 | - | A-3 |
| 100+ | | | Airline** |

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

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)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

| | | | |
|---|---|--|----------------|
| Appearance | Clear yellowish alkaline liquid with organic odour; mixes with water. | | |
| Physical state | Liquid | Relative density (Water = 1) | 1.02-1.05 |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Applicable |
| pH (as supplied) | 11-12 | Decomposition temperature | Not Available |
| Melting point / freezing point (°C) | -16 (freezing pt.) | Viscosity (cSt) | Not Available |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | Not Applicable |
| 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 Applicable | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | Not Applicable | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Available | Gas group | Not Available |
| Solubility in water | 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 | <ul style="list-style-type: none"> ▶ 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 | <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.</p> <p>There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.</p> |
| Ingestion | <p>The material can produce chemical burns within the oral cavity and gastrointestinal tract following 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.</p> <p>The substance and/or its metabolites may bind to haemoglobin inhibiting normal uptake of oxygen. This condition, known as "methaemoglobinemia", is a form of oxygen starvation (anoxia).</p> <p>Symptoms include cyanosis (a bluish discolouration skin and mucous membranes) and breathing difficulties. Symptoms may not be evident until several hours after exposure.</p> <p>The lethal oral dose of nitrite has been variously reported as between 0.7 and 6 grams (approximately 10-100 milligrams/kilogram body weight). This may be lower for children (especially newborns), the elderly, and people with certain enzyme deficiencies. Symptoms develop within 15-45 minutes.</p> <p>Inorganic nitrites produce smooth muscle relaxation, methaemoglobin in the blood, and cyanosis (a bluing of the extremities).</p> |
| Skin Contact | <p>The material can produce chemical burns following direct contact with the skin.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>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.</p> <p>There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.</p> |
| Eye | <p>The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.</p> <p>If applied to the eyes, this material causes severe eye damage.</p> |
| Chronic | <p>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.</p> <p>Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Strong evidence exists that this substance may cause irreversible mutations (though not lethal) even following a single exposure.</p> <p>Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.</p> <p>This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.</p> <p>Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation.</p> <p>There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.</p> <p>There is limited evidence that, skin contact with this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Chronic exposure to nitro compounds of aromatic hydrocarbons have been known to cause liver and kidney damage.</p> <p>Animal testing to see whether nitrites caused cancer proved inconclusive.</p> |

| | | |
|-----------------------------|--|---|
| Multitreat-102 | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| sodium nitrite | TOXICITY | IRRITATION |
| | Inhalation(Rat) LC50; 0.006 mg/L4h ^[2] Oral(Rat) LD50; 85 mg/kg ^[2] | Eye (rabbit): 500 mg/24hr - mild |
| sodium tolyltriazole | TOXICITY | IRRITATION |
| | Dermal (rabbit) LD50: >2000 mg/kg ^[1] Oral(Rat) LD50; 735 mg/kg ^[1] | Eye (rabbit): Corrosive Skin (rabbit): Corrosive |
| | | Skin: adverse effect observed (corrosive) ^[1] |
| potassium hydroxide | TOXICITY | IRRITATION |
| | Oral(Rat) LD50; 214-324 mg/kg ^[2] | Eye (rabbit):1mg/24h rinse-moderate Skin (human): 50 mg/24h SEVERE |
| | | Skin (rabbit): 50 mg/24h SEVERE |

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

| | |
|---|--|
| SODIUM NITRITE | Tumorigenic - Carcinogenic by RTECS criteria. Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. |
| SODIUM TOLYLTRIAZOLE | 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. for 50% aqueous solution: ** Bayer |
| POTASSIUM HYDROXIDE | 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. |
| SODIUM TOLYLTRIAZOLE & POTASSIUM HYDROXIDE | Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. |

| | | | |
|--|---|---------------------------------|---|
| 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 either not available or does not fill the criteria for classification
✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

| Multitreat-102 | Endpoint | Test Duration (hr) | Species | Value | Source |
|----------------|---------------|--------------------|---------------|---------------|---------------|
| | Not Available | Not Available | Not Available | Not Available | Not Available |

| sodium nitrite | Endpoint | Test Duration (hr) | Species | Value | Source |
|----------------|-----------|--------------------|-------------------------------|---------------|--------|
| | NOEC(ECx) | 2h | Fish | 0.02mg/l | 4 |
| | EC50 | 72h | Algae or other aquatic plants | >100mg/l | 2 |
| | LC50 | 96h | Fish | 0.54-26.3mg/l | 2 |
| | EC50 | 48h | Crustacea | ca.12.51mg/l | 1 |

| sodium tolyltriazole | Endpoint | Test Duration (hr) | Species | Value | Source |
|----------------------|-----------|--------------------|-------------------------------|----------|--------|
| | EC10(ECx) | 504h | Crustacea | 0.4mg/l | 2 |
| | EC50 | 72h | Algae or other aquatic plants | 29mg/l | 2 |
| | LC50 | 96h | Fish | 55mg/l | 2 |
| | EC50 | 48h | Crustacea | 8.58mg/l | 2 |

| potassium hydroxide | Endpoint | Test Duration (hr) | Species | Value | Source |
|---------------------|-----------|--------------------|---------|--------|--------|
| | LC50 | 96h | Fish | 80mg/l | 2 |
| | NOEC(ECx) | 24h | Fish | 28mg/l | 2 |

Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and/or delayed, to the structure and/ or functioning of natural ecosystems.
Very toxic 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.
Toxic to flora.
Toxic to soil organisms.
For Nitrate/Nitrite
Environmental Fate: Nitrates form from nitrate or ammonium ions by micro-organisms in soil, water, sewage and the digestive tract. The concern with nitrate in the environment is related to its conversion to nitrite. Primary sources of organic nitrates include human sewage and livestock manure, especially from feedlots.
Atmospheric Fate: Nitrate/nitrites do not evaporate into the air; however, any nitrites released into the air slowly oxidize to nitrates.
Prevent, by any means available, spillage from entering drains or water courses.
DO NOT discharge into sewer or waterways.

Persistence and degradability

| | | |
|-------------------|--------------------------------|-------------------------|
| Ingredient | Persistence: Water/Soil | Persistence: Air |
|-------------------|--------------------------------|-------------------------|

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|----------------|-------------------------|------------------|
| sodium nitrite | LOW | LOW |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|----------------|-----------------------|
| sodium nitrite | LOW (LogKOW = 0.0564) |

Mobility in soil

| Ingredient | Mobility |
|----------------|-------------------|
| sodium nitrite | LOW (KOC = 23.74) |



SECTION 13 Disposal considerations

Waste treatment methods

| | |
|-------------------------------------|---|
| Product / Packaging disposal | <ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible. <p>Otherwise:</p> <ul style="list-style-type: none"> ▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product. <p>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.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> ▶ Reduction ▶ Reuse ▶ Recycling ▶ Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <ul style="list-style-type: none"> ▶ 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. ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ▶ Treat and neutralise at an approved treatment plant. Treatment should involve: Neutralisation followed by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material) ▶ Decontaminate empty containers. |
|-------------------------------------|---|

SECTION 14 Transport information

Labels Required

| | |
|-------------------------|---|
| |  |
| Marine Pollutant |  |
| HAZCHEM | 2R |

Land transport (ADG)

| | | |
|-------------------------------------|--|----------------|
| UN number | 1719 | |
| UN proper shipping name | CAUSTIC ALKALI LIQUID, N.O.S. (contains potassium hydroxide) | |
| Transport hazard class(es) | Class | 8 |
| | Subrisk | Not Applicable |
| Packing group | III | |
| Environmental hazard | Environmentally hazardous | |
| Special precautions for user | Special provisions | 223 274 |
| | Limited quantity | 5 L |

Air transport (ICAO-IATA / DGR)

| | |
|--------------------------------|--|
| UN number | 1719 |
| UN proper shipping name | Caustic alkali liquid, n.o.s. * (contains potassium hydroxide) |

| | | |
|-------------------------------------|---|----------------|
| Transport hazard class(es) | ICAO/IATA Class | 8 |
| | ICAO / IATA Subrisk | Not Applicable |
| | ERG Code | 8L |
| Packing group | III | |
| Environmental hazard | Environmentally hazardous | |
| Special precautions for user | Special provisions | A3 A803 |
| | Cargo Only Packing Instructions | 856 |
| | Cargo Only Maximum Qty / Pack | 60 L |
| | Passenger and Cargo Packing Instructions | 852 |
| | Passenger and Cargo Maximum Qty / Pack | 5 L |
| | Passenger and Cargo Limited Quantity Packing Instructions | Y841 |
| | Passenger and Cargo Limited Maximum Qty / Pack | 1 L |

Sea transport (IMDG-Code / GGVSee)

| | | |
|-------------------------------------|--|----------------|
| UN number | 1719 | |
| UN proper shipping name | CAUSTIC ALKALI LIQUID, N.O.S. (contains potassium hydroxide) | |
| Transport hazard class(es) | IMDG Class | 8 |
| | IMDG Subrisk | Not Applicable |
| Packing group | III | |
| Environmental hazard | Marine Pollutant | |
| Special precautions for user | EMS Number | F-A , S-B |
| | Special provisions | 223 274 |
| | Limited Quantities | 5 L |

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

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

| Product name | Group |
|----------------------|---------------|
| sodium nitrite | Not Available |
| sodium tolyltriazole | Not Available |
| potassium hydroxide | Not Available |

Transport in bulk in accordance with the ICG Code

| Product name | Ship Type |
|----------------------|---------------|
| sodium nitrite | Not Available |
| sodium tolyltriazole | Not Available |
| potassium hydroxide | Not Available |

SECTION 15 Regulatory information

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

sodium nitrite is found on the following regulatory lists

- Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
- Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 2
- Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
- Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

- Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 7
- Australian Inventory of Industrial Chemicals (AIIC)
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2A: Probably carcinogenic to humans

sodium tolyltriazole is found on the following regulatory lists

- Australian Inventory of Industrial Chemicals (AIIC)

potassium hydroxide is found on the following regulatory lists

- Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
- Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

- Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6
- Australian Inventory of Industrial Chemicals (AIIC)

National Inventory Status

| National Inventory | Status |
|---|--------|
| Australia - AIIC / Australia Non-Industrial Use | Yes |

| National Inventory | Status |
|-------------------------------|---|
| Canada - DSL | Yes |
| Canada - NDSL | No (sodium nitrite; sodium tolyltriazole; potassium hydroxide) |
| China - IECSC | Yes |
| Europe - EINEC / ELINCS / NLP | Yes |
| Japan - ENCS | No (sodium tolyltriazole) |
| Korea - KECI | Yes |
| New Zealand - NZIoC | Yes |
| Philippines - PICCS | Yes |
| USA - TSCA | Yes |
| Taiwan - TCSI | Yes |
| Mexico - INSQ | No (sodium tolyltriazole) |
| Vietnam - NCI | Yes |
| Russia - FBEPH | Yes |
| Legend: | Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

SECTION 16 Other information

| | |
|----------------------|------------|
| Revision Date | 20/08/2021 |
| Initial Date | 24/04/2014 |

SDS Version Summary

| Version | Date of Update | Sections Updated |
|-----------|----------------|---|
| 5.1.1.1 | 03/09/2020 | Classification change due to full database hazard calculation/update. |
| 5.1.2.1 | 26/04/2021 | Regulation Change |
| 5.1.3.1 | 03/05/2021 | Regulation Change |
| 5.1.4.1 | 06/05/2021 | Regulation Change |
| 5.1.5.1 | 10/05/2021 | Regulation Change |
| 5.1.5.2 | 30/05/2021 | Template Change |
| 5.1.5.3 | 04/06/2021 | Template Change |
| 5.1.5.4 | 05/06/2021 | Template Change |
| 5.1.6.4 | 07/06/2021 | Regulation Change |
| 5.1.6.5 | 09/06/2021 | Template Change |
| 5.1.6.6 | 11/06/2021 | Template Change |
| 5.1.6.7 | 15/06/2021 | Template Change |
| 5.1.7.7 | 17/06/2021 | Regulation Change |
| 5.1.8.7 | 21/06/2021 | Regulation Change |
| 5.1.8.8 | 05/07/2021 | Template Change |
| 5.1.9.8 | 14/07/2021 | Regulation Change |
| 5.1.10.8 | 19/07/2021 | Regulation Change |
| 5.1.10.9 | 01/08/2021 | Template Change |
| 5.1.11.9 | 02/08/2021 | Regulation Change |
| 5.1.12.9 | 05/08/2021 | Regulation Change |
| 5.1.13.9 | 09/08/2021 | Regulation Change |
| 6.1.13.9 | 20/08/2021 | Classification change due to full database hazard calculation/update. |
| 6.1.14.9 | 23/08/2021 | Regulation Change |
| 6.1.15.9 | 26/08/2021 | Regulation Change |
| 6.1.15.10 | 29/08/2021 | Template Change |
| 6.1.16.10 | 30/08/2021 | Regulation Change |

Other information

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.

The 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.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit.
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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.