

| Chemwatch: 74-0338 | |
|--|--|
| Version No: 4.1 | Issue Date: 12/10/2021 Print Date: 09/14/2022 |
| Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements | L.GHS.AUS.EN.E |

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

| Product Identifier | | |
|-------------------------------|---|--|
| Product name | Vintessential Acetic Acid Analysis Kit Vial 2 Coenzyme (liquid) | |
| Chemical Name | Not Applicable | |
| Synonyms | Item No: 4A100, 4A105 | |
| 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 | General laboratory reagent for in vitro use only. Measuring acetic acid in grape juice and wine. | |
|--------------------------|--|--|
| | Use according to manufacturer's directions. | |

Details of the manufacturer or supplier of the safety data sheet

| Registered company name | Vintessential Laboratories | |
|-------------------------|---|--|
| Address | 2 BRASSER AVENUE DROMANA VIC 3936 Australia | |
| Telephone | 61 3 5987 2242 | |
| Fax | ax +61 3 5987 3303 | |
| Website | Website Not Available | |
| Email Not Available | | |

Emergency telephone number

| Association / Organisation | oisons Information Centre | |
|-----------------------------------|---------------------------|--|
| Emergency telephone numbers | 13 11 26 | |
| Other emergency telephone numbers | Not Available | |

SECTION 2 Hazards identification

| assification of the substance or mixture | | | | |
|---|---|--|--|--|
| Poisons Schedule Not Applicable | | | | |
| Classification ^[1] | lassification [1] Acute Toxicity (Oral) Category 4, Serious Eye Damage/Eye Irritation Category 2A | | | |
| 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 Warning

| H302 | Harmful if swallowed. |
|------|--------------------------------|
| H319 | Causes serious eye irritation. |

Precautionary statement(s) Prevention

| P264 | 264 Wash all exposed external body areas thoroughly after handling. | |
|---|---|--|
| P270 Do not eat, drink or smoke when using this product. | | |
| P280 Wear protective gloves, protective clothing, eye protection and face protection. | | |

Precautionary statement(s) Response

| P305+P351+P338 | F IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. | | |
|---|---|--|--|
| P337+P313 | 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. | | | |
| P330 Rinse mouth. | | | |

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

| DE04 | Dispass of contents/container to outherized hereadous or appendix wate collection point in considered with any local regulation |
|------|--|
| 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 |
|---|-----------|---|
| 111-46-6 | 10-30 | diethylene glycol |
| 987-65-5 | 1-10 | adenosine 5'-triphosphate disodium salt |
| 26628-22-8 | <0.05 | sodium azide |
| Not Available | balance | Use according to manufacturer's directions. |
| Legend: 1. Classified by Chernwatch; 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 measu | | | |
|---|--|--|--|
| 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 | | | |
| Ingestion | If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical advice. Avoid giving milk or oils. Avoid giving alcohol. | | |

Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours. Treat symptomatically.

- Polyethylene glycols are generally poorly absorbed orally and are mostly unchanged by the kidney.
- Dermal absorption can occur across damaged skin (e.g. through burns) leading to increased osmolality, anion gap metabolic acidosis, elevated calcium, low ionised calcium, CNS depression and renal failure.
- Treatment consists of supportive care.

[Ellenhorn and Barceloux: Medical Toxicology]

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.
- carbon dioxide.

Special hazards arising from the substrate or mixture

| · · | |
|----------------------|-------------|
| Fire Incompatibility | None known. |

Advice for firefighters

| | Equipment should be thoroughly decontaminated after use. 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). |
| Fire/Explosion Hazard | May emit acrid smoke. |
| | Decomposes on heating and produces toxic fumes of: carbon dioxide (CO2) other pyrolysis products typical of burning organic material. |
| | May emit poisonous fumes. |
| HAZCHEM | Not Applicable |

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 | 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. Place in a suitable, labelled container for waste disposal. | | | | | | |
|--------------|--|---------------------|---------|--------|--------------|---------------|---------------|
| | Chemical Class For release ont | | ••• | | nts listed i | n order of p | priority. |
| Major Spills | SORBENT TYPE | RANK | APPLICA | TION | COLL | ECTION | LIMITATIONS |
| | LAND SPILL - | SMALL | | | | | |
| | cross-linked polymer - particulate | | 1 | shovel | shovel | R, W, SS | |
| | cross-linked polymer - pillow | | 1 | throw | pitchfork | R, DGC, RT | |
| | sorbent clay - particulate | | 2 | shovel | shovel | R,I, P | |
| | wood fiber - p | wood fiber - pillow | | | throw | pitchfork | R, P, DGC, RT |
| | treated wood fiber - pillow | | 3 | throw | pitchfork | DGC, RT | |
| | foamed glass - pillow | | 4 | throw | pichfork | R, P, DGC, RT | |
| | LAND SPILL - MEDIUM | | | | | | |

| cross-linked polymer - particulate | 1 | blower | skiploader | R,W, SS |
|--|--|--|---|--|
| polypropylene - particulate | 2 | blower | skiploader | W, SS, DGC |
| sorbent clay - particulate | 2 | blower | skiploader | R, I, W, P, DGC |
| polypropylene - mat | 3 | throw | skiploader | DGC, RT |
| expanded mineral - particulate | 3 | blower | skiploader | R, I, W, P, DGC |
| polyurethane - mat | 4 | throw | skiploader | DGC, RT |
| DGC: Not effective where ground cover R; Not reusable I: Not incinerable P: Effectiveness reduced when rainy RT:Not effective where terrain is rugge SS: Not for use within environmentally W: Effectiveness reduced when windy Reference: Sorbents for Liquid Hazard R.W Melvold et al: Pollution Technolog Moderate hazard. Clear area of personnel and move Alert Fire Brigade and tell them low Wear breathing apparatus plus pro Prevent, by any means available, Stop leak if safe to do so. Contain spill with sand, earth or ve Collect recoverable product into la Neutralise/decontaminate residue Collect solid residues and seal in 1 Wash area and prevent runoff into After clean up operations, deconta H contamination of drains or water | ed dous : dous : gy Re e upw catior otecti spilla ermic spilla ermic (see labell (see labell o drain amina | sitive sites Substance view No. 1: n and natur ve gloves. ge from en ulite. d containen Section 13 ed drums fo ns. ate and laur | 50: Noyes Data e of hazard. Itering drains or s for recycling. f or specific ag or disposal. Inder all protecti | a Corporation 1988 r 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 | 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. Prevent concentration in hollows and sumps. DO NOT enter confined spaces until atmosphere has been checked. DO NOT allow material to contact humans, exposed food or food utensils. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained. |
| Other information | Store in original containers. Keep containers securely sealed. No smoking, naked lights or ignition sources. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Observe manufacturer's storage and handling recommendations contained within this SDS. |

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 | Glycols and their ethers undergo violent decomposition in contact with 70% perchloric acid. This seems likely to involve formation of the glycol perchlorate esters (after scission of ethers) which are explosive, those of ethylene glycol and 3-chloro-1,2-propanediol being more powerful than glyceryl nitrate, and the former so sensitive that it explodes on addition of water. Alcohols are incompatible with strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents. reacts, possibly violently, with alkaline metals and alkaline earth metals to produce hydrogen react with strong acids, strong caustics, aliphatic amines, isocyanates, acetaldehyde, benzoyl peroxide, chromic acid, chromium oxide, dialkylzincs, dichlorine oxide, ethylene oxide, hypochlorous acid, isopropyl chlorocarbonate, lithium tetrahydroaluminate, nitrogen dioxide, pentafluoroguanidine, phosphorus halides, phosphorus pentasulfide, tangerine oil, triethylaluminium, triisobutylaluminium should not be heated above 49 deg. C. when in contact with aluminium equipment Avoid strong acids, bases. |

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

| INGREDIENT DATA | | | | | | | | | |
|--|--|---|------------------|------------------|-------------------------|---------------------------|--|--|--|
| Source | Ingredient Material name TWA | | STEL | Peak | Notes | | | | |
| Australia Exposure Standards | diethylene 2,2'-Oxybis[ethanol] 23 ppm / 100 mg/m3 | | | Not Available | Not Available | Not Available | | | |
| Australia Exposure Standards | sodium azide | Sodium azide | Not Available | Not Available | 0.11 ppm / 0.3 mg/m3 | (benomyl an are establish | wo substances marked with this footnote of sodium azide), the exposure standards ned as gravimetric (mg/m ³) values and to volumetric values. | | |
| Emergency Limits | | | | | | | | | |
| Ingredient | TEEL-1 | | | TEEL-2 | | | TEEL-3 | | |
| diethylene glycol | 6.9 ppm | 6.9 ppm | | | | 860 ppm | | | |
| sodium azide | 0.026 mg/m3 | | | 0.29 mg/m3 | | | 5.3 mg/m3 | | |
| Ingredient | Original IDLH | I | | | Revised I | Revised IDLH | | | |
| diethylene glycol | Not Available | Not Available | | | | | Not Available | | |
| adenosine 5'-triphosphate disodium salt | Not Available | Not Available | | | | | Not Available | | |
| sodium azide | Not Available | Not Available | | | | | Not Available | | |
| Occupational Exposure Bandin | 9 | | | | | | | | |
| Ingredient | Occupationa | Exposure Band Rating | 9 | | Occupati | onal Exposure | Band Limit | | |
| adenosine 5'-triphosphate disodium salt | E | E | | | | ≤ 0.01 mg/m³ | | | |
| Notes: | Occupational | Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the | | | | | | | |

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.

MATERIAL DATA

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- ▶ acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

Exposure controls

| | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls of 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 strategical "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure. General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant. | | | | | | | |
|-------------------------------------|--|----------------------------------|--|--|--|--|--|--|
| | Type of Contaminant: | Air Speed: | | | | | | |
| Appropriate engineering controls | solvent, vapours, degreasing etc., evaporating from tank (in | 0.25-0.5 m/s (50-100 f/min) | | | | | | |
| Controis | aerosols, fumes from pouring operations, intermittent conta drift, plating acid fumes, pickling (released at low velocity ir | 0.5-1 m/s (100-200 f/min.) | | | | | | |
| | direct spray, spray painting in shallow booths, drum filling, generation into zone of rapid air motion) | 1-2.5 m/s (200-500 f/min.) | | | | | | |
| | grinding, abrasive blasting, tumbling, high speed wheel ger very high rapid air motion) | 2.5-10 m/s (500-2000 f/min.) | | | | | | |
| | Within each range the appropriate value depends on: | | | | | | | |
| | Lower end of the range | Upper end of the range | | | | | | |
| | 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents | | | | | | |
| | 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity | | | | | | |
| | | | | | | | | |
| | 3: Intermittent, low production. | 3: High production, heavy use | | | | | | |
| | 4: Large hood or large air mass in motion | 4: Small hood-local control only | | | | | | |

| Other protection | Overalls. P.V.C apron. Barrier cream. Skin cleansing cream. Eye wash unit. |
|-------------------------|--|
| Body protection | See Other protection below |
| Hands/feet protection | Wear chemical protective gloves, e.g. PVC. Wear stately footwear or safety gumbools, 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. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: requency and durability of glove has a dependent on usage. Important factors in the selection of gloves include: requency and durability of glove type is dependent on usage. Important factors in the selection of gloves include: |
| Skin protection | See Hand protection below |
| 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. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent] |
| Personal protection | |
| | Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be adjusted in a tank 2 meters distant from the extraction point. Other mechanical consideration producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used. |

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:

Vintessential Acetic Acid Analysis Kit Vial 2 Coenzyme (liquid)

| Material | СРІ |
|----------------|-----|
| BUTYL | А |
| NATURAL RUBBER | С |
| NEOPRENE | С |
| NITRILE | С |
| PVA | С |

Respiratory protection

Type AB-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 |
|---------------------------------------|-------------------------|-------------------------|-----------------------------|
| up to 5 x ES | AB-AUS / Class 1 P2 | - | AB-PAPR-AUS / Class 1 P2 |
| up to 25 x ES | Air-line* | AB-2 P2 | AB-PAPR-2 P2 |
| up to 50 x ES | - | AB-3 P2 | - |

TON C 50+ x ES - Air-line** -

* 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.

Annearance Clear liquid, missible with water

| ^ - | Ful | l-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)

- 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 liquid; miscible with water. | | |
|---|------------------------------------|--|----------------|
| Physical state | Liquid | Relative density (Water = 1) | Not Available |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Available |
| pH (as supplied) | Not Available | Decomposition temperature (°C) | Not Available |
| Melting point / freezing point (°C) | Not Available | 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%) | 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 may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo. 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. |
|-----------|---|
| 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. Swallowing of the liquid may cause aspiration of vomit into the lungs with the risk of haemorrhaging, pulmonary oedema, progressing to chemical pneumonitis; serious consequences may result. Signs and symptoms of chemical (aspiration) pneumonitis may include coughing, gasping, choking, burning of the mouth, difficult breathing, and bluish coloured skin (cyanosis). |

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| | - | | | | |
|--|--|--|---|--|--|
| | | | | | |
| | Repeated exposure may cause skin cracking, flaking or Most liquid alcohols appear to act as primary skin irritant man. | ts in humans. Significant percutaneou | | | |
| | Open cuts, abraded or irritated skin should not be expos | ed to this material | | | |
| Skin Contact | The material may produce mild skin irritation; limited evid produces mild inflammation of the skin in a substant produces significant, but mild, inflammation when ap present twenty-four hours or more after the end of the standard stan | ial number of individuals following dia oplied to the healthy intact skin of ani | rect contact, and/or | | |
| | Skin irritation may also be present after prolonged or rep dermatitis is often characterised by skin redness (erythe thickening of the epidermis. At the microscopic level the intracellular oedema of the epidermis. | ma) and swelling (oedema) which ma | ay progress to blistering (vesiculation), scaling and | | |
| Еуе | Limited evidence or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. | | | | |
| Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving | | | umulative health effects involving organs or | | |
| Chronic | biochemical systems. There is some evidence that human exposure to the material may result in developmental toxicity. This evidence is based on animal studies where effects have been observed in the absence of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not secondary non-specific consequences of the other toxic effects. | | | | |
| Vintessential Acetic Acid | ΤΟΧΙΟΙΤΥ | IRRITATION | | | |
| Analysis Kit Vial 2 Coenzyme (liquid) | Not Available | Not Available | | | |
| (iquiu) | | 1 | | | |
| | ΤΟΧΙΟΙΤΥ | IRRITATION | | | |
| | Dermal (rabbit) LD50: 11890 mg/kg ^[2] | Eye (rabbit) 50 mg | g mild | | |
| diethylene glycol | Inhalation(Rat) LC50; >4.6 mg/l4h ^[1] | Eye: no adverse e | ffect observed (not irritating) ^[1] | | |
| | Oral (Rat) LD50; 12565 mg/kg ^[2] | Skin (human): 112 | 2 mg/3d-I mild | | |
| | | Skin (rabbit): 500 | mg mild | | |
| | | Skin: no adverse | Skin: no adverse effect observed (not irritating) ^[1] | | |
| | ΤΟΧΙΟΙΤΥ | TOXICITY IRRITATION | | | |
| adenosine 5'-triphosphate | Oral (Rat) LD50; >2000 mg/kg ^[1] | Eye: no adverse e | affect observed (not irritating) ^[1] | | |
| disodium salt | Skin: no adverse effect observed (not irritating) ^[1] | | | | |
| | | 1 | | | |
| | TOXICITY | IRRITATION | | | |
| sodium azide | Dermal (rabbit) LD50: 20 mg/kg ^[2] | Eye: no adverse effect observed (not irritating) ^[1] | | | |
| | Inhalation(Rat) LC50; >0.054<0.52 mg/l4h ^[1] | Skin: no adverse | effect observed (not irritating) ^[1] | | |
| | Oral (Rat) LD50; 27 mg/kg ^[2] | | | | |
| 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 | | | | |
| | | | | | |
| DIETHYLENE GLYCOL | The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Diglycolic acid is formed following the oxidation of accidentally ingested diethylene glycol in the body and can lead to severe complications with fatal outcome. | | | | |
| ADENOSINE 5'-TRIPHOSPHATE DISODIUM SALT | 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. 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. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production. | | | | |
| | the concentration of and duration of exposure to the irrita result of exposure due to high concentrations of irritating | ating substance. On the other hand, i substance (often particles) and is co | ation is an infrequent disorder with rates related to ndustrial bronchitis is a disorder that occurs as a | | |
| SODIUM AZIDE | the concentration of and duration of exposure to the irrita result of exposure due to high concentrations of irritating | ating substance. On the other hand, i substance (often particles) and is co nd mucus production. | ation is an infrequent disorder with rates related to ndustrial bronchitis is a disorder that occurs as a mpletely reversible after exposure ceases. The | | |
| SODIUM AZIDE Vintessential Acetic Acid Analysis Kit Vial 2 Coenzyme (liquid) & ADENOSINE 5'-TRIPHOSPHATE DISODIUM SALT | the concentration of and duration of exposure to the irritating result of exposure due to high concentrations of irritating disorder is characterized by difficulty breathing, cough a | ating substance. On the other hand, i substance (often particles) and is co nd mucus production. he, irritability, arrhythmias, dyspnae, | ation is an infrequent disorder with rates related to ndustrial bronchitis is a disorder that occurs as a mpletely reversible after exposure ceases. The | | |
| Vintessential Acetic Acid Analysis Kit Vial 2 Coenzyme (liquid) & ADENOSINE 5'-TRIPHOSPHATE DISODIUM SALT | the concentration of and duration of exposure to the irrita result of exposure due to high concentrations of irritating disorder is characterized by difficulty breathing, cough a General anaesthesia, somnolence, convulsions, headac | ating substance. On the other hand, i y substance (often particles) and is co nd mucus production. he, irritability, arrhythmias, dyspnae, ure search. | ation is an infrequent disorder with rates related to ndustrial bronchitis is a disorder that occurs as a impletely reversible after exposure ceases. The respiratory stimulation, diarrhoea recorded. | | |
| Vintessential Acetic Acid Analysis Kit Vial 2 Coenzyme (liquid) & ADENOSINE 5'-TRIPHOSPHATE DISODIUM | the concentration of and duration of exposure to the irrita result of exposure due to high concentrations of irritating disorder is characterized by difficulty breathing, cough a General anaesthesia, somnolence, convulsions, headac No significant acute toxicological data identified in literat | ating substance. On the other hand, i substance (often particles) and is co nd mucus production. he, irritability, arrhythmias, dyspnae, | ation is an infrequent disorder with rates related to ndustrial bronchitis is a disorder that occurs as a mpletely reversible after exposure ceases. The | | |
| Vintessential Acetic Acid Analysis Kit Vial 2 Coenzyme (liquid) & ADENOSINE 5'-TRIPHOSPHATE DISODIUM SALT Acute Toxicity | the concentration of and duration of exposure to the irrita result of exposure due to high concentrations of irritating disorder is characterized by difficulty breathing, cough a General anaesthesia, somnolence, convulsions, headac No significant acute toxicological data identified in literat | ating substance. On the other hand, i y substance (often particles) and is cond mucus production. he, irritability, arrhythmias, dyspnae, ure search. Carcinogenicity | ation is an infrequent disorder with rates related to ndustrial bronchitis is a disorder that occurs as a impletely reversible after exposure ceases. The respiratory stimulation, diarrhoea recorded. | | |
| Vintessential Acetic Acid Analysis Kit Vial 2 Coenzyme (liquid) & ADENOSINE 5'-TRIPHOSPHATE DISODIUM SALT Acute Toxicity Skin Irritation/Corrosion | the concentration of and duration of exposure to the irritaresult of exposure due to high concentrations of irritating disorder is characterized by difficulty breathing, cough at General anaesthesia, somnolence, convulsions, headact No significant acute toxicological data identified in literat | ating substance. On the other hand, i substance (often particles) and is cond mucus production. he, irritability, arrhythmias, dyspnae, ure search. Carcinogenicity Reproductivity | ation is an infrequent disorder with rates related to ndustrial bronchitis is a disorder that occurs as a mpletely reversible after exposure ceases. The respiratory stimulation, diarrhoea recorded. | | |

Legena:

| Toxicity | |
|----------|--|

| Vintessential Acetic Acid | Endpoint | Test Duration (hr) | | Species | | Value | Source |
|--|------------------|--------------------|---|--|-----|------------------|------------------|
| Analysis Kit Vial 2 Coenzyme (liquid) | Not Available | Not Available | | Not Available Not Available | | Not Available | Not Available |
| | Endpoint | Test Duration (hr) | | Species | Val | ue | Source |
| | EC50 | 48h | | Crustacea | 840 |)00mg/l | 1 |
| diethylene glycol | NOEC(ECx) | 192h | | Algae or other aquatic plants | 800 |)mg/l | 1 |
| | LC50 | 96h | | Fish | >10 |)0mg/l | 4 |
| | EC50 | 96h | | Algae or other aquatic plants | 650 | 00-13000mg/l | 2 |
| adenosine 5'-triphosphate | Endpoint | Test Duration (hr) | | Species | | Value | Source |
| | NOEC(ECx) | 24h | | Crustacea | | 42.8mg/l | 2 |
| disodium salt | EC50 | 72h | | Algae or other aquatic plants | | >100mg/l | 2 |
| | EC50 | 48h | | Crustacea | | >43.8mg/l | 2 |
| | Endpoint | Test Duration (hr) | 5 | Species | Val | ue | Source |
| | EC50 | 48h | (| Crustacea | >=(|).4<0.6mg/l | 2 |
| sodium azide | EC50(ECx) | 96h | A | Algae or other aquatic plants | 0.2 | 42-0.429mg/l | 4 |
| | LC50 | 96h | F | Fish | 0.6 | 8mg/l | 2 |
| | EC50 | 96h | ŀ | Algae or other aquatic plants | 0.2 | 42-0.429mg/l | 4 |
| Legend: | Ecotox databas | | | d Substances - Ecotoxicological Inform rd Assessment Data 6. NITE (Japan) · | | | |

DO NOT discharge into sewer or waterways.

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|--|-------------------------|------------------|
| diethylene glycol | LOW | LOW |
| adenosine 5'-triphosphate disodium salt | HIGH | HIGH |
| sodium azide | LOW | LOW |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|------------------------|
| diethylene glycol | LOW (BCF = 180) |
| adenosine 5'-triphosphate disodium salt | LOW (LogKOW = -3.6136) |
| sodium azide | LOW (LogKOW = 0.1631) |

Mobility in soil

| Ingredient | Mobility |
|---|--------------------|
| diethylene glycol | HIGH (KOC = 1) |
| adenosine 5'-triphosphate disodium salt | LOW (KOC = 10) |
| sodium azide | HIGH (KOC = 1.342) |

SECTION 13 Disposal considerations

| | Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible. Otherwise: |
|------------------------------|--|
| | 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. |
| | Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in the |
| Product / Packaging disposal | area. In some areas, certain wastes must be tracked. |
| | A Hierarchy of Controls seems to be common - the user should investigate: |
| | Reduction |
| | ▶ Reuse |
| | ▶ Recycling |
| | Disposal (if all else fails) |
| | This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been |

| contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. |
|---|
| 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. |
| Dispose of 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. Observe all label safeguards until containers are cleaned and destroyed. |

SECTION 14 Transport information

| Labels Required | | |
|------------------|----------------|--|
| Marine Pollutant | NO | |
| HAZCHEM | Not Applicable | |

Land transport (ADG): 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 and the IBC code Not Applicable

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

| Product name | Group |
|---|---------------|
| diethylene glycol | Not Available |
| adenosine 5'-triphosphate disodium salt | Not Available |
| sodium azide | Not Available |
| | |

Transport in bulk in accordance with the ICG Code

| Product name | Ship Type |
|--|---------------|
| diethylene glycol | Not Available |
| adenosine 5'-triphosphate disodium salt | Not Available |
| sodium azide | Not Available |

SECTION 15 Regulatory information

Japan - ENCS

Korea - KECI

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

| diethylene glycol is found on the following regulatory lists | | | | | |
|--|--|--|--|--|--|
| | rmation System (HCIS) - Hazardous Chemicals Scheduling of Medicines and Poisons (SUSMP) - | Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6 | | | |
| Schedule 10 / Appendix C | 3 · · · · · · · · · · · · · · · · · · | Australian Inventory of Industrial Chemicals (AIIC) | | | |
| Australia Standard for the Uniform Schedule 5 | Scheduling of Medicines and Poisons (SUSMP) - | | | | |
| adenosine 5'-triphosphate disod | ium salt is found on the following regulatory lists | | | | |
| Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4 | | Australian Inventory of Industrial Chemicals (AIIC) | | | |
| | | | | | |
| sodium azide is found on the foll | sodium azide is found on the following regulatory lists | | | | |
| Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals | | Australian Inventory of Industrial Chemicals (AIIC) | | | |
| | | | | | |
| National Inventory Status | | | | | |
| National Inventory | Status | | | | |
| Australia - AIIC / Australia Non-Industrial Use | Yes | | | | |
| Canada - DSL | Yes | | | | |
| Canada - NDSL | No (diethylene glycol; adenosine 5'-triphosphate disodium salt; sodium azide) | | | | |
| China - IECSC | Yes | | | | |
| Europe - EINEC / ELINCS / NLP | Yes | | | | |

 New Zealand - NZIoC
 Yes

 Philippines - PICCS
 No (adenosine 5'-triphosphate disodium salt)

Yes

Yes

| National Inventory | Status | |
|--------------------|---|--|
| USA - TSCA | SA - TSCA Yes | |
| Taiwan - TCSI | iwan - TCSI Yes | |
| Mexico - INSQ | Yes | |
| Vietnam - NCI | Yes | |
| Russia - FBEPH | FBEPH No (adenosine 5'-triphosphate disodium salt) | |
| 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 | 12/10/2021 |
|---------------|------------|
| Initial Date | 01/13/2017 |

SDS Version Summary

| Version | Date of Update | Sections Updated |
|---------|----------------|--|
| 3.1 | 11/01/2019 | One-off system update. NOTE: This may or may not change the GHS classification |
| 4.1 | 12/10/2021 | Classification change due to full database hazard calculation/update. |

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 |
| Bel: 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 |
| |

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