

# QA Triallate 500 EC Herbicide

## Quantum Agrosiences Holdings Pty Ltd

Chemwatch: 7987-26

Version No: 2.1

Safety Data Sheet according to Work Health and Safety Regulations (Hazardous Chemicals) 2023 and ADG requirements

Chemwatch Hazard Alert Code: 2

Initial Date: 05/11/2025

Revision Date: 05/11/2025

Print Date: 06/11/2025

S.GHS.AUS.EN.E

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

#### Product Identifier

|                               |                                                                           |
|-------------------------------|---------------------------------------------------------------------------|
| Product name                  | QA Triallate 500 EC Herbicide                                             |
| Chemical Name                 | Not Applicable                                                            |
| Synonyms                      | Not Available                                                             |
| Proper shipping name          | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains tri-allate) |
| 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 | Use according to manufacturer's directions. |
|--------------------------|---------------------------------------------|

#### Details of the manufacturer or importer of the safety data sheet

|                         |                                                                          |
|-------------------------|--------------------------------------------------------------------------|
| Registered company name | Quantum Agrosiences Holdings Pty Ltd                                     |
| Address                 | Suite 2, Level 7, 330 Collins Street, Melbourne, Victoria 3000 Australia |
| Telephone               | 1300 658 988                                                             |
| Fax                     | Not Available                                                            |
| Website                 | <a href="http://www.quantumag.au">www.quantumag.au</a>                   |
| Email                   | <a href="mailto:vincent@quantumag.au">vincent@quantumag.au</a>           |

#### Emergency telephone number

|                                     |                                     |
|-------------------------------------|-------------------------------------|
| Association / Organisation          | CHEMWATCH EMERGENCY RESPONSE (24/7) |
| Emergency telephone number(s)       | +61 1800 951 288 (ID#: 7987-26)     |
| Other emergency telephone number(s) | +61 3 9573 3188                     |

### SECTION 2 Hazards identification

#### Classification of the substance or mixture

COMBUSTIBLE LIQUID, regulated for storage purposes only

|                               |                                                                                                                                                                                                                                  |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Poisons Schedule              | S5                                                                                                                                                                                                                               |
| Classification <sup>[1]</sup> | Flammable Liquids Category 4, Acute Toxicity (Oral) Category 4, Sensitisation (Skin) Category 1, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Long-Term 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         | Warning                                                                             |

#### Hazard statement(s)

|      |                                                                    |
|------|--------------------------------------------------------------------|
| H227 | Combustible liquid.                                                |
| H302 | Harmful if swallowed.                                              |
| H317 | May cause an allergic skin reaction.                               |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H410 | Very toxic to aquatic life with long lasting effects.              |

#### Precautionary statement(s) Prevention

|      |                                                                                                |
|------|------------------------------------------------------------------------------------------------|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P260 | Do not breathe mist/vapours/spray.                                                             |

|      |                                                                        |
|------|------------------------------------------------------------------------|
| P280 | Wear protective gloves and protective clothing.                        |
| P264 | Wash all exposed external body areas thoroughly after handling.        |
| P270 | Do not eat, drink or smoke when using this product.                    |
| P273 | Avoid release to the environment.                                      |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |

Precautionary statement(s) Response

|           |                                                                                     |
|-----------|-------------------------------------------------------------------------------------|
| P370+P378 | In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.   |
| P302+P352 | IF ON SKIN: Wash with plenty of water.                                              |
| P314      | Get medical advice/attention if you feel unwell.                                    |
| P333+P313 | If skin irritation or rash occurs: Get medical advice/attention.                    |
| P362+P364 | Take off contaminated clothing and wash it before reuse.                            |
| P391      | Collect spillage.                                                                   |
| P301+P312 | IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider if you feel unwell. |
| P330      | Rinse mouth.                                                                        |

Precautionary statement(s) Storage

|      |                                   |
|------|-----------------------------------|
| P403 | Store in a well-ventilated place. |
|------|-----------------------------------|

Precautionary statement(s) Disposal

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

No further product hazard information.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

| CAS No    | %[weight]                                                                                                                                                                                    | Name       |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 2303-17-5 | 30-60                                                                                                                                                                                        | tri-allate |
| 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"><li>▶ Wash out immediately with fresh running water.</li><li>▶ 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.</li><li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li><li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Skin Contact | <p>If skin contact occurs:</p> <ul style="list-style-type: none"><li>▶ Immediately remove all contaminated clothing, including footwear.</li><li>▶ Flush skin and hair with running water (and soap if available).</li><li>▶ Seek medical attention in event of irritation.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Inhalation   | <ul style="list-style-type: none"><li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li><li>▶ Other measures are usually unnecessary.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Ingestion    | <ul style="list-style-type: none"><li>▶ <b>IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.</b></li><li>▶ For advice, contact a Poisons Information Centre or a doctor.</li><li>▶ Urgent hospital treatment is likely to be needed.</li><li>▶ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.</li><li>▶ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.</li><li>▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.</li></ul> <p><b>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:</b></p> <ul style="list-style-type: none"><li>▶ <b>INDUCE</b> vomiting with fingers down the back of the throat, <b>ONLY IF CONSCIOUS</b>. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li></ul> <p><b>NOTE:</b> Wear a protective glove when inducing vomiting by mechanical means.</p> |

Indication of any immediate medical attention and special treatment needed

- Medical literature on human exposure to thiocarbamate derivatives is scarce.
- ▶ Animal studies suggest that contact dermatitis and thyroid hyperplasia may occur following exposure.
  - ▶ These compounds do not have the cholinergic properties of structurally related carbamate insecticides.
  - ▶ The usual measures for gut and skin contamination are recommended for large doses.
  - ▶ Some thiocarbamates are structurally similar to disulfiram and may cause the characteristically unpleasant alcohol type reactions lasting for several hours; they may respond to fluids, oxygen and analgesics. Dysrhythmias may occur and patients with serious reactions should have cardiac monitoring.
  - ▶ Precautions should be taken to prohibit intake of alcohol for 10 days.
  - ▶ Fats, oils and lipid solvents must not be consumed as they may enhance absorption.

## QA Triallate 500 EC Herbicide

As a general rule thiocarbamates can be absorbed by the skin, mucous membranes and respiratory and gastrointestinal tract. They are eliminated quickly via expired air and urine. Two major pathways exist for the metabolism of thiocarbamates in mammals. One is via sulfoxidation and conjugation with glutathione. The conjugation product is cleaved to the cysteine derivative which is further metabolised to a mercapturic acid compound. The second route involves oxidation of the sulfur to a sulfoxide which is oxidised to a sulfone, or hydroxylation to compounds which enter the carbon metabolic pool.

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

For poisons (where specific treatment regime is absent):

## BASIC TREATMENT

- ▶ Establish a patent airway with suction where necessary.
- ▶ Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- ▶ Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- ▶ Monitor and treat, where necessary, for pulmonary oedema.
- ▶ Monitor and treat, where necessary, for shock.
- ▶ Anticipate seizures.
- ▶ **DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

## ADVANCED TREATMENT

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

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

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

## SECTION 5 Firefighting measures

## Extinguishing media

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

## 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"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ Avoid spraying water onto liquid pools.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> </ul>         |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit toxic fumes of carbon monoxide (CO).</li> <li>▶ May emit acid smoke.</li> <li>▶ Mists containing combustible materials may be explosive.</li> </ul> <p>Combustion products include:<br/>carbon dioxide (CO<sub>2</sub>)<br/>hydrogen chloride<br/>phosgene<br/>nitrogen oxides (NO<sub>x</sub>)<br/>sulfur oxides (SO<sub>x</sub>)<br/>other pyrolysis products typical of burning organic material.</p> |
| HAZCHEM               | ●3Z                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## 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"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul> |
| Major Spills | Environmental hazard - contain spillage.                                                                                                                                                                                                                                                                                                                                                                                                                                       |

Continued...

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

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"><li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li><li>▶ Avoid all personal contact, including inhalation.</li><li>▶ Wear protective clothing when risk of exposure occurs.</li><li>▶ Use in a well-ventilated area.</li><li>▶ Prevent concentration in hollows and sumps.</li><li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li><li>▶ Avoid smoking, naked lights or ignition sources.</li><li>▶ Avoid contact with incompatible materials.</li><li>▶ When handling, <b>DO NOT eat, drink or smoke.</b></li><li>▶ Keep containers securely sealed when not in use.</li><li>▶ Avoid physical damage to containers.</li><li>▶ Always wash hands with soap and water after handling.</li><li>▶ Work clothes should be laundered separately.</li><li>▶ Use good occupational work practice.</li><li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li><li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.</li></ul> |
| Other information | <ul style="list-style-type: none"><li>▶ Store in original containers.</li><li>▶ Keep containers securely sealed.</li><li>▶ No smoking, naked lights or ignition sources.</li><li>▶ Store in a cool, dry, well-ventilated area.</li><li>▶ Store away from incompatible materials and foodstuff containers.</li><li>▶ Protect containers against physical damage and check regularly for leaks.</li><li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

Conditions for safe storage, including any incompatibilities

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suitable container      | <ul style="list-style-type: none"><li>▶ Metal can or drum</li><li>▶ Packaging as recommended by manufacturer.</li><li>▶ Check all containers are clearly labelled and free from leaks.</li></ul>                                                                                                                                                                                                                           |
| Storage incompatibility | <ul style="list-style-type: none"><li>▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.</li><li>▶ Thiocarbamates and dithiocarbamates are incompatible with acids, peroxides, and acid halides.</li><li>▶ Flammable gases are generated by the combination of thiocarbamates and dithiocarbamates with aldehydes, nitrides, and hydrides.</li><li>▶ Avoid reaction with oxidising agents</li></ul> |

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

| Ingredient | Original IDLH | Revised IDLH  |
|------------|---------------|---------------|
| tri-allate | Not Available | Not Available |

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.</p> <p>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. 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.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p> <table><tr><td>Type of Contaminant:</td><td>Air Speed:</td></tr><tr><td>solvent, vapours, degreasing etc., evaporating from tank (in still air)</td><td>0.25-0.5 m/s (50-100 f/min)</td></tr><tr><td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td><td>0.5-1 m/s (100-200 f/min.)</td></tr></table> | Type of Contaminant: | Air Speed: | solvent, vapours, degreasing etc., evaporating from tank (in still air) | 0.25-0.5 m/s (50-100 f/min) | aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) | 0.5-1 m/s (100-200 f/min.) |
| Type of Contaminant:                                                                                                                                                                                                | Air Speed:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |            |                                                                         |                             |                                                                                                                                                                                                                     |                            |
| solvent, vapours, degreasing etc., evaporating from tank (in still air)                                                                                                                                             | 0.25-0.5 m/s (50-100 f/min)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |            |                                                                         |                             |                                                                                                                                                                                                                     |                            |
| aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) | 0.5-1 m/s (100-200 f/min.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |            |                                                                         |                             |                                                                                                                                                                                                                     |                            |

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## QA Triallate 500 EC Herbicide

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|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                       | <div>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</div> <div>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <div>1-2.5 m/s (200-500 f/min)</div> <div>2.5-10 m/s (500-2000 f/min.)</div>                                                                                                                                    |
|                                                                       | Within each range the appropriate value depends on:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                 |
|                                                                       | <div>Lower end of the range</div> <div>1: Room air currents minimal or favourable to capture</div> <div>2: Contaminants of low toxicity or of nuisance value only</div> <div>3: Intermittent, low production.</div> <div>4: Large hood or large air mass in motion</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <div>Upper end of the range</div> <div>1: Disturbing room air currents</div> <div>2: Contaminants of high toxicity</div> <div>3: High production, heavy use</div> <div>4: Small hood - local control only</div> |
|                                                                       | Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                 |
| Individual protection measures, such as personal protective equipment | <div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                 |
| Eye and face protection                                               | <div><div>▶ Safety glasses with side shields.</div><div>▶ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]</div><div>▶ 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 in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].</div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                 |
| Skin protection                                                       | See Hand protection below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                 |
| Hands/feet protection                                                 | <div><div>▶ Wear chemical protective gloves, e.g. PVC.</div><div>▶ Wear safety footwear or safety gumboots, e.g. Rubber</div></div> <div>NOTE:</div> <div><div>▶ 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.</div><div>▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</div></div> <div>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.</div> <div>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.</div> <div>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.</div> <div>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</div> <div><div>· frequency and duration of contact,</div><div>· chemical resistance of glove material,</div><div>· glove thickness and</div><div>· dexterity</div></div> <div>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</div> <div><div>· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</div><div>· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</div><div>· Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</div><div>· Contaminated gloves should be replaced.</div></div> <div>As defined in ASTM F-739-96 in any application, gloves are rated as:</div> <div><div>· Excellent when breakthrough time &gt; 480 min</div><div>· Good when breakthrough time &gt; 20 min</div><div>· Fair when breakthrough time &lt; 20 min</div><div>· Poor when glove material degrades</div></div> <div>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.</div> <div>It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</div> <div>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</div> <div>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</div> <div><div>· Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</div><div>· Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential</div></div> <div>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.</div> |                                                                                                                                                                                                                 |
| Body protection                                                       | See Other protection below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                 |
| Other protection                                                      | <div><div>▶ Overalls.</div><div>▶ P.V.C apron.</div><div>▶ Barrier cream.</div><div>▶ Skin cleansing cream.</div><div>▶ Eye wash unit.</div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                 |

**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(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), 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                                     | Amber to brown coloured liquid with characteristic hydrocarbon solvent odour; emulsifiables in water. |                                                     |                |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------|----------------|
| Physical state                                 | Liquid                                                                                                | Relative density (Water = 1)                        | 1.05           |
| 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 Applicable                                                                                        | Viscosity (cSt)                                     | Not Available  |
| Initial boiling point and boiling range (°C)   | >160                                                                                                  | Molecular weight (g/mol)                            | Not Applicable |
| Flash point (°C)                               | >62                                                                                                   | Taste                                               | Not Available  |
| Evaporation rate                               | Not Available                                                                                         | Explosive properties                                | Not Available  |
| Flammability                                   | Combustible.                                                                                          | Oxidising properties                                | Not Available  |
| Upper Explosive Limit (%)                      | Not Available                                                                                         | Surface Tension (dyn/cm or mN/m)                    | Not Available  |
| Lower Explosive Limit (%)                      | Not Available                                                                                         | Volatile Component (%vol)                           | Not Available  |
| Vapour pressure (kPa)                          | Not Available                                                                                         | Gas group                                           | Not Available  |
| Solubility in water                            | Miscible                                                                                              | pH as a solution (1%)                               | Not Available  |
| Vapour density (Air = 1)                       | Not Available                                                                                         | VOC g/L                                             | Not Available  |
| Heat of Combustion (kJ/g)                      | Not Available                                                                                         | Ignition Distance (cm)                              | Not Available  |
| Flame Height (cm)                              | Not Available                                                                                         | Flame Duration (s)                                  | Not Available  |
| Enclosed Space Ignition Time Equivalent (s/m3) | Not Available                                                                                         | Enclosed Space Ignition Deflagration Density (g/m3) | Not Available  |

**SECTION 10 Stability and reactivity**

| Reactivity                         | See section 7                                                                                                                                                                                        |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chemical stability                 | <ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul> |
| 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**

| a) Acute Toxicity            | There is sufficient evidence to classify this material as acutely toxic. |
|------------------------------|--------------------------------------------------------------------------|
| b) Skin Irritation/Corrosion | Based on available data, the classification criteria are not met.        |

## QA Triallate 500 EC Herbicide

|                                             |                                                                                                              |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>c) Serious Eye Damage/Irritation</b>     | Based on available data, the classification criteria are not met.                                            |
| <b>d) Respiratory or Skin sensitisation</b> | There is sufficient evidence to classify this material as sensitising to skin or the respiratory system      |
| <b>e) Mutagenicity</b>                      | Based on available data, the classification criteria are not met.                                            |
| <b>f) Carcinogenicity</b>                   | Based on available data, the classification criteria are not met.                                            |
| <b>g) Reproductivity</b>                    | Based on available data, the classification criteria are not met.                                            |
| <b>h) STOT - Single Exposure</b>            | Based on available data, the classification criteria are not met.                                            |
| <b>i) STOT - Repeated Exposure</b>          | There is sufficient evidence to classify this material as toxic to specific organs through repeated exposure |
| <b>j) Aspiration Hazard</b>                 | Based on available data, the classification criteria are not met.                                            |

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhaled</b>      | The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Ingestion</b>    | 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.<br>Lethal doses of some thiocarbamates have produced muscle weakness and ascending paralysis progressing to respiratory paralysis and death in animals. Exposure to small quantities of thiocarbamates and intake of small quantities of ethanol may produce flushing, breathing difficulties, nausea and vomiting and lowered blood pressure.<br>The acute toxicity of thiocarbamates is generally low, because of their rapid metabolism. Exposure to high doses may produce signs such as loss of appetite, squinting, excessive production of saliva, watery eyes, hairs standing on end, laboured breathing, reduced body temperature, incoordination, depression and rapid muscle twitching.                                                                                                                                                                                                                                                                                               |
| <b>Skin Contact</b> | Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.<br>Open cuts, abraded or irritated skin should not be exposed to this material<br>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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Eye</b>          | The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Chronic</b>      | Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems.<br>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.<br><br>Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.<br>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.<br>Thiocarbamates have been shown to alter sperm form and therefore reproduction.<br>Some dithiocarbamates may cause birth defects and cancer and may affect male reproductive capacity. They may also cause goitre (overactivity of the thyroid gland) and nerve disorders.<br>Animal testing revealed that triallate did not cause adverse effects at doses up to 200 parts per million. Although it has a weak effect in causing mutations in bacteria, it was not shown to cause mutations in higher organisms. Studies also confirm that triallate does not cause delayed toxicity to the nervous system. |

|                                      |                                                   |                   |
|--------------------------------------|---------------------------------------------------|-------------------|
| <b>QA Triallate 500 EC Herbicide</b> | <b>TOXICITY</b>                                   | <b>IRRITATION</b> |
|                                      | Not Available                                     | Not Available     |
| <b>tri-allate</b>                    | <b>TOXICITY</b>                                   | <b>IRRITATION</b> |
|                                      | Dermal (rabbit) LD50: 2225 mg/kg <sup>[2]</sup>   | Not Available     |
|                                      | Inhalation (Rat) LC50: >5.3 mg/l4h <sup>[2]</sup> |                   |
|                                      | Oral (Rat) LD50: 800 mg/kg <sup>[2]</sup>         |                   |

**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**

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TRI-ALLATE</b> | <p>Toxicity Class: WHO III;EPA III NOEL (2 y) for mice 20 mg/kg, for rats 50 mg/kg;(1 y) for dogs 2.5 mg/kg * Inhalation of saturated air for 12 hours had no harmful effects on rats * ADI: 0.005 mg/kg/day NOEL: 0.5 mg/kg/day</p> <p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p> <p>In mammals, fatty acid elongation greater than C18 also occurs, primarily on the endoplasmic reticulum, and utilizes CoA derivatives, as is found in plants. In mammals, long-chain fatty acids are important for membrane phospholipids and for neural growth and myelination.</p> <p>The acetanilide and thiocarbamate herbicides are relatively non-toxic to mammals but some effects have been noted. Molinate, a thiocarbamate, has caused testicular lesions in rats with a single dose, after sulfoxidation within the organism. The lesion was characterized by failed spermiogenesis and phagocytosis of spermatids. In a 2-year rat study, metolachlor, an acetanilide, caused the wasting of testicles at doses of 150 mg/kg/day. Acetochlor has also been shown to cause testicular toxicity in male dogs given 10 and 50 mg/kg/day with a decrease in testes weight, atrophy and degeneration of seminiferous tubules and hypospermia. There were also effects on the kidney and severe neurological effects at 50 mg/kg/day consisting of abnormal head movements, stiffness and rigidity of hind limbs, ataxia tremor and other symptoms. These effects were accompanied by histopathological findings in the vermis cerebellum. The toxic effect of the sulfoxide metabolite of molinate was attributed to inhibition of esterase activity, which decreased plasma and testicular testosterone concentrations. However, this metabolite seems to be selectively produced in rodents and is not found in other mammals, including humans. No connection has ever been made between the toxic effects of acetanilides and thiocarbamates on mammals and inhibition of VLCFAs. However, very-long-chain polyunsaturated fatty acids (&gt;24) are normally found in excitatory tissues, and myelin-deficient mouse mutants have very low fatty acid elongation activity. In addition, very-long-chain fatty acids are highly important in rat sperm maturation. During their transit from the caput to the cauda segments of the epididymis, rat spermatozoa lipid content and composition change significantly. The proportions of oleate and linoleate fatty acids decrease and there is an increase in the longer-chain fatty acids (C20 – C24) as well as the uncommon long-chain polyenoic fatty acids of the n-9 series. It might be highly informative to determine whether these two</p> |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Continued...

classes of herbicides inhibit very-long-chain fatty acid biosynthesis in mammals as well as in plants, and to see whether there is any connection between the mammalian toxicity of these chemicals and very-long-chain fatty acid synthesis..

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.

In humans, triallate is slightly toxic if swallowed. It is practically non-toxic on skin contact or if inhaled. Animal testing showed abnormal behaviour appearing at very high doses. Symptoms of poisoning by ingestion included depression, poor appetite, mouth watering, weakness, and seizures. Inhaling large amounts may cause itching, a scratchy throat, sneezing, and coughing. Triallate is moderately toxic to skin and is a mild eye irritant; it does not cause allergic skin reactions in animal testing. Although triallate is a carbamate, it does not inhibit the enzyme cholinesterase. Prolonged exposure causes symptoms similar to acute exposure; in animals, this has resulted in reduction in food intake and body weight, changes in blood composition, and effects on the digestive tract, sex organs, liver, thymus gland, spleen and kidneys. Mineralisation of the brain and cornea occurred in animals. In animals triallate also caused adverse reproductive effects; however, it did not cause birth defects. No genetic damage occurred in tests using live animals, but some tests using bacterial and animal cell cultures showed genetic damage. Tests suggest that at usual exposure rates, triallate is unlikely to cause cancer. Triallate may cause changes to cells of the brain, liver and spleen. It appears to be completely eliminated from the body in 7-10 days.

[ \* The Pesticides Manual, Incorporating The Agrochemicals Handbook, 10th Edition, Editor Clive Tomlin, 1994, British Crop Protection Council]

|                                   |   |                          |   |
|-----------------------------------|---|--------------------------|---|
| 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                      |                                                                                                                                                                                                                                                                                                                          |                    |                               |                 |               |
| QA Triallate 500 EC Herbicide | Endpoint                                                                                                                                                                                                                                                                                                                 | Test Duration (hr) | Species                       | Value           | Source        |
|                               | Not Available                                                                                                                                                                                                                                                                                                            | Not Available      | Not Available                 | Not Available   | Not Available |
| tri-allate                    | Endpoint                                                                                                                                                                                                                                                                                                                 | Test Duration (hr) | Species                       | Value           | Source        |
|                               | NOEC(ECx)                                                                                                                                                                                                                                                                                                                | 504h               | Crustacea                     | 0.013mg/L       | 1             |
|                               | EC50                                                                                                                                                                                                                                                                                                                     | 48h                | Crustacea                     | 0.091mg/l       | 1             |
|                               | EC50                                                                                                                                                                                                                                                                                                                     | 96h                | Algae or other aquatic plants | 0.018-0.023mg/L | 4             |
|                               | LC50                                                                                                                                                                                                                                                                                                                     | 96h                | Fish                          | 0.44-0.87mg/l   | 4             |
| Legend:                       | Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 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 |                    |                               |                 |               |

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.

**DO NOT discharge into sewer or waterways.**

Persistence and degradability

|            |                         |                  |
|------------|-------------------------|------------------|
| Ingredient | Persistence: Water/Soil | Persistence: Air |
| tri-allate | HIGH                    | HIGH             |

Bioaccumulative potential

|            |                     |
|------------|---------------------|
| Ingredient | Bioaccumulation     |
| tri-allate | MEDIUM (BCF = 1520) |

Mobility in soil

|            |                      |
|------------|----------------------|
| Ingredient | Mobility             |
| tri-allate | LOW (Log KOC = 1641) |

SECTION 13 Disposal considerations

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waste treatment methods      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Product / Packaging disposal | <ul style="list-style-type: none"><li>Containers may still present a chemical hazard/ danger when empty.</li><li>Return to supplier for reuse/ recycling if possible.</li></ul> Otherwise: <ul style="list-style-type: none"><li>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.</li><li>Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li><li><b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li><li>It may be necessary to collect all wash water for treatment before disposal.</li><li>In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li><li>Where in doubt contact the responsible authority.</li></ul> |

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

SECTION 14 Transport information

Labels Required

|                  |                                                                                   |
|------------------|-----------------------------------------------------------------------------------|
|                  |  |
| Marine Pollutant |  |
| HAZCHEM          | •3Z                                                                               |

Land transport (ADG)

|                                    |                                                                           |                      |
|------------------------------------|---------------------------------------------------------------------------|----------------------|
| 14.1. UN number or ID number       | 3082                                                                      |                      |
| 14.2. UN proper shipping name      | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains tri-allate) |                      |
| 14.3. Transport hazard class(es)   | Class                                                                     | 9                    |
|                                    | Subsidiary Hazard                                                         | Not Applicable       |
| 14.4. Packing group                | III                                                                       |                      |
| 14.5. Environmental hazard         | Environmentally hazardous                                                 |                      |
| 14.6. Special precautions for user | Special provisions                                                        | 274 331 335 375 AU01 |
|                                    | Limited quantity                                                          | 5 L                  |

Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in;

(a) packagings;

(b) IBCs; or

(c) any other receptacle not exceeding 500 kg(L).

- Australian Special Provisions (SP AU01) - ADG Code 7th Ed.

Air transport (ICAO-IATA / DGR)

|                                    |                                                                           |                    |
|------------------------------------|---------------------------------------------------------------------------|--------------------|
| 14.1. UN number                    | 3082                                                                      |                    |
| 14.2. UN proper shipping name      | Environmentally hazardous substance, liquid, n.o.s. (contains tri-allate) |                    |
| 14.3. Transport hazard class(es)   | ICAO/IATA Class                                                           | 9                  |
|                                    | ICAO / IATA Subsidiary Hazard                                             | Not Applicable     |
|                                    | ERG Code                                                                  | 9L                 |
| 14.4. Packing group                | III                                                                       |                    |
| 14.5. Environmental hazard         | Environmentally hazardous                                                 |                    |
| 14.6. Special precautions for user | Special provisions                                                        | A97 A158 A197 A215 |
|                                    | Cargo Only Packing Instructions                                           | 964                |
|                                    | Cargo Only Maximum Qty / Pack                                             | 450 L              |
|                                    | Passenger and Cargo Packing Instructions                                  | 964                |
|                                    | Passenger and Cargo Maximum Qty / Pack                                    | 450 L              |
|                                    | Passenger and Cargo Limited Quantity Packing Instructions                 | Y964               |
|                                    | Passenger and Cargo Limited Maximum Qty / Pack                            | 30 kg G            |

Sea transport (IMDG-Code / GGVSee)

|                                    |                                                                           |                |
|------------------------------------|---------------------------------------------------------------------------|----------------|
| 14.1. UN number                    | 3082                                                                      |                |
| 14.2. UN proper shipping name      | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains tri-allate) |                |
| 14.3. Transport hazard class(es)   | IMDG Class                                                                | 9              |
|                                    | IMDG Subsidiary Hazard                                                    | Not Applicable |
| 14.4. Packing group                | III                                                                       |                |
| 14.5. Environmental hazard         | Marine Pollutant                                                          |                |
| 14.6. Special precautions for user | EMS Number                                                                | F-A, S-F       |
|                                    | Special provisions                                                        | 274 335 969    |

|  |                    |     |
|--|--------------------|-----|
|  | Limited Quantities | 5 L |
|--|--------------------|-----|

14.7. Maritime transport in bulk according to IMO instruments

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code  
Not Applicable

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

| Product name | Group          |
|--------------|----------------|
| tri-allate   | Not Applicable |

14.7.3. Transport in bulk in accordance with the IGC Code

| Product name | Ship Type      |
|--------------|----------------|
| tri-allate   | Not Applicable |

SECTION 15 Regulatory information

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

tri-allate is found on the following regulatory lists

Australia Chemicals with non-industrial uses removed from the Australian Inventory of Chemical Substances (old Inventory)

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5

Additional Regulatory Information

Not Applicable

National Inventory Status

| National Inventory                                | Status                                                                                                                                                                                            |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Australia - AIIC / Australia Non-Industrial Use   | Yes                                                                                                                                                                                               |
| Canada - DSL                                      | No (tri-allate)                                                                                                                                                                                   |
| Canada - NDSL                                     | No (tri-allate)                                                                                                                                                                                   |
| China - IECSC                                     | Yes                                                                                                                                                                                               |
| Europe - EINEC / ELINCS / NLP                     | Yes                                                                                                                                                                                               |
| Japan - ENCS                                      | No (tri-allate)                                                                                                                                                                                   |
| Korea - KECI                                      | No (tri-allate)                                                                                                                                                                                   |
| New Zealand - NZIoC                               | Yes                                                                                                                                                                                               |
| Philippines - PICCS                               | No (tri-allate)                                                                                                                                                                                   |
| USA - TSCA                                        | No (tri-allate)                                                                                                                                                                                   |
| Taiwan - TCSI                                     | Yes                                                                                                                                                                                               |
| Mexico - INSQ                                     | Yes                                                                                                                                                                                               |
| Vietnam - NCI                                     | Yes                                                                                                                                                                                               |
| Russia - FBEPH                                    | No (tri-allate)                                                                                                                                                                                   |
| UAE - Control List (Banned/Restricted Substances) | No (tri-allate)                                                                                                                                                                                   |
| Legend:                                           | Yes = All CAS declared ingredients are on the inventory<br>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 | 05/11/2025 |
| Initial Date  | 05/11/2025 |

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

## QA Triallate 500 EC Herbicide

- 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
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration
- MARPOL: International Convention for the Prevention of Pollution from Ships
- IMSBC: International Maritime Solid Bulk Cargoes Code
- IGC: International Gas Carrier Code
- IBC: International Bulk Chemical Code
  
- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSDL: 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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