

# Carboline Accelerator A-20

RESENE PAINTS AUSTRALIA

Chemwatch Hazard Alert Code: 2

Version No: 2.3

Safety Data Sheet according to WHS and ADG requirements

Issue Date: 22/04/2018

Print Date: 30/04/2018

S.GHS.AUS.EN

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

### Product Identifier

|                               |                            |
|-------------------------------|----------------------------|
| Product name                  | Carboline Accelerator A-20 |
| Synonyms                      | ex Carboline 30/05/2015    |
| Other means of identification | Not Available              |

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

|                          |  |
|--------------------------|--|
| Relevant identified uses | Component of multicomponent industrial coatings. For Industrial Use only |
|--------------------------|--|

### Details of the supplier of the safety data sheet

|                         |   |
|-------------------------|---|
| Registered company name | RESENE PAINTS AUSTRALIA                         |
| Address                 | 7 Production Ave, Molendinar QLD 4214 Australia |
| Telephone               | +61 7 55126600                                  |
| Fax                     | +61 7 55126697                                  |
| Website                 | Not Available                                   |
| Email                   | Not Available                                   |

### Emergency telephone number

|                                   |               |
|-----------------------------------|---------------|
| Association / Organisation        | Not Available |
| Emergency telephone numbers       | 131126        |
| Other emergency telephone numbers | Not Available |

### CHEMWATCH EMERGENCY RESPONSE

| Primary Number | Alternative Number 1 | Alternative Number 2 |
|----------------|----------------------|----------------------|
| 1800 039 008   | 1800 039 008         | +612 9186 1132       |

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


## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

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

|                               |   |
|-------------------------------|---|
| Poisons Schedule              | Not Applicable  |
| Classification <sup>[1]</sup> | Acute Toxicity (Oral) Category 4, Eye Irritation Category 2A  |
| Legend:                       | 1. Classified by Chemwatch; 2. Classification drawn from HSIS; 3. Classification drawn from EC Directive 1272/2008 - Annex VI |

### Label elements

|                     |   |
|---------------------|---|
| Hazard pictogram(s) |  |
| SIGNAL WORD         | <b>WARNING</b>  |

### Hazard statement(s)

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

### Supplementary statement(s)

Not Applicable

### Precautionary statement(s) Prevention

|      |   |
|------|---|
| P270 | Do not eat, drink or smoke when using this product. |
|------|---|

Continued...

|             |  |
|-------------|--|
| <b>P280</b> | Wear protective gloves/protective clothing/eye protection/face protection. |
|-------------|--|

**Precautionary statement(s) Response**

|                       |  |
|-----------------------|--|
| <b>P305+P351+P338</b> | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| <b>P337+P313</b>      | If eye irritation persists: Get medical advice/attention.  |
| <b>P301+P312</b>      | IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.   |
| <b>P330</b>           | Rinse mouth.   |

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

|             |   |
|-------------|---|
| <b>P501</b> | Dispose of contents/container in accordance with local regulations. |
|-------------|---|

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No     | %[weight] | Name                        |
|------------|-----------|-----------------------------|
| 10043-01-3 | 75-100    | aluminium sulfate, hydrated |

**SECTION 4 FIRST AID MEASURES****Description of first aid measures**

|                     |   |
|---------------------|---|
| <b>Eye Contact</b>  | If this product comes in contact with eyes: <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul> |
| <b>Skin Contact</b> | If skin or hair contact occurs: <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>   |
| <b>Inhalation</b>   | <ul style="list-style-type: none"> <li>▶ If dust is inhaled, remove from contaminated area.</li> <li>▶ Encourage patient to blow nose to ensure clear passage of breathing.</li> <li>▶ If irritation or discomfort persists seek medical attention.</li> </ul>  |
| <b>Ingestion</b>    | <ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>   |

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

- ▶ Manifestation of aluminium toxicity include hypercalcaemia, anaemia, Vitamin D refractory osteodystrophy and a progressive encephalopathy (mixed dysarthria-apraxia of speech, asterixis, tremulousness, myoclonus, dementia, focal seizures). Bone pain, pathological fractures and proximal myopathy can occur.
- ▶ Symptoms usually develop insidiously over months to years (in chronic renal failure patients) unless dietary aluminium loads are excessive.
- ▶ Serum aluminium levels above 60 ug/ml indicate increased absorption. Potential toxicity occurs above 100 ug/ml and clinical symptoms are present when levels exceed 200 ug/ml.
- ▶ Deferoxamine has been used to treat dialysis encephalopathy and osteomalacia. CaNa2EDTA is less effective in chelating aluminium.  
[Ellenhorn and Barceloux: Medical Toxicology]

**SECTION 5 FIREFIGHTING MEASURES****Extinguishing media**

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

**Special hazards arising from the substrate or mixture**

|                             |             |
|-----------------------------|-------------|
| <b>Fire Incompatibility</b> | None known. |
|-----------------------------|-------------|

**Advice for firefighters**

|                              |   |
|------------------------------|---|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</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> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul> |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ Not considered a significant fire risk, however containers may burn.</li> </ul> Decomposition may produce toxic fumes of:<br>,<br>sulfur oxides (SOx)  |
| <b>HAZCHEM</b>               | Not Applicable  |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

|                     |  |
|---------------------|--|
| <b>Minor Spills</b> | <ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid contact with skin and eyes.</li> <li>▶ Wear impervious gloves and safety glasses.</li> <li>▶ Use dry clean up procedures and avoid generating dust.</li> <li>▶ Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).</li> <li>▶ Do NOT use air hoses for cleaning</li> <li>▶ Place spilled material in clean, dry, sealable, labelled container.</li> </ul>   |
| <b>Major Spills</b> | <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Control personal contact with the substance, by using protective equipment and dust respirator.</li> <li>▶ Prevent spillage from entering drains, sewers or water courses.</li> <li>▶ Avoid generating dust.</li> <li>▶ Sweep, shovel up. Recover product wherever possible.</li> <li>▶ Put residues in labelled plastic bags or other containers for disposal.</li> <li>▶ If contamination of drains or waterways occurs, advise emergency services.</li> </ul> |

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

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

|                          |   |
|--------------------------|---|
| <b>Safe handling</b>     | <ul style="list-style-type: none"> <li>▶ Limit all unnecessary personal contact.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</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 are maintained.</li> </ul>  |
| <b>Other information</b> | <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry area protected from environmental extremes.</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> <p>For major quantities:</p> <ul style="list-style-type: none"> <li>▶ Consider storage in banded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams).</li> <li>▶ Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.</li> </ul> |

### Conditions for safe storage, including any incompatibilities

|                                |  |
|--------------------------------|--|
| <b>Suitable container</b>      | <ul style="list-style-type: none"> <li>▶ Lined metal can, lined metal pail/ can.</li> <li>▶ Plastic pail.</li> <li>▶ Polyliner drum.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> <li>▶ <b>DO NOT use aluminium, galvanised or tin-plated containers</b></li> </ul>   |
| <b>Storage incompatibility</b> | <p>Avoid contamination of water, foodstuffs, feed or seed.</p> <p>Aluminium sulfate</p> <ul style="list-style-type: none"> <li>▶ forms sulfuric acid in water</li> <li>▶ reacts violently with bases and many other materials</li> <li>▶ dry material is weakly corrosive to carbon steel; aqueous solution attacks aluminium and other metals forming hydrogen gas</li> <li>▶ In presence of moisture, the material is corrosive to aluminium, zinc and tin producing highly flammable hydrogen gas.</li> </ul> <p>None known</p> |



+ X + O + + +

X — Must not be stored together

- 0 — May be stored together with specific preventions  
 + — May be stored together

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA


| Source                       | Ingredient                  | Material name                    | TWA     | STEL          | Peak          | Notes         |
|------------------------------|-----------------------------|----------------------------------|---------|---------------|---------------|---------------|
| Australia Exposure Standards | aluminium sulfate, hydrated | Aluminium, soluble salts (as Al) | 2 mg/m3 | Not Available | Not Available | Not Available |

#### EMERGENCY LIMITS

| Ingredient                  | Material name    | TEEL-1   | TEEL-2   | TEEL-3    |
|-----------------------------|------------------|----------|----------|-----------|
| aluminium sulfate, hydrated | Aluminum sulfate | 38 mg/m3 | 64 mg/m3 | 380 mg/m3 |

| Ingredient                  | Original IDLH | Revised IDLH  |
|-----------------------------|---------------|---------------|
| aluminium sulfate, hydrated | Not Available | Not Available |

### Exposure controls

| <p><b>Appropriate engineering controls</b></p>   | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. 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> <ul style="list-style-type: none"> <li>▶ Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.</li> <li>▶ If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.</li> </ul> <p>Such protection might consist of:</p> <p>(a): particle dust respirators, if necessary, combined with an absorption cartridge;</p> <p>(b): filter respirators with absorption cartridge or canister of the right type;</p> <p>(c): fresh-air hoods or masks.</p> <p>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 border="1" data-bbox="391 1167 1485 1312"> <thead> <tr> <th>Type of Contaminant:</th> <th>Air Speed:</th> </tr> </thead> <tbody> <tr> <td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td> <td>1-2.5 m/s (200-500 f/min.)</td> </tr> <tr> <td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td> <td>2.5-10 m/s (500-2000 f/min.)</td> </tr> </tbody> </table> <p>Within each range the appropriate value depends on:</p> <table border="1" data-bbox="391 1368 1485 1536"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood-local control only</td> </tr> </tbody> </table> <p>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 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres 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.</p> | Type of Contaminant: | Air Speed: | direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1-2.5 m/s (200-500 f/min.) | grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion). | 2.5-10 m/s (500-2000 f/min.) | Lower end of the range | Upper end of the range | 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents | 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity | 3: Intermittent, low production. | 3: High production, heavy use | 4: Large hood or large air mass in motion | 4: Small hood-local control only |
|--|--|----------------------|------------|--|----------------------------|--|------------------------------|------------------------|------------------------|---|---------------------------------|--|----------------------------------|----------------------------------|-------------------------------|---|----------------------------------|
| Type of Contaminant:   | Air Speed:   |                      |            |  |                            |  |                              |                        |                        |   |                                 |  |                                  |                                  |                               |   |                                  |
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1-2.5 m/s (200-500 f/min.)   |                      |            |  |                            |  |                              |                        |                        |   |                                 |  |                                  |                                  |                               |   |                                  |
| grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).           | 2.5-10 m/s (500-2000 f/min.)   |                      |            |  |                            |  |                              |                        |                        |   |                                 |  |                                  |                                  |                               |   |                                  |
| Lower end of the range   | Upper end of the range   |                      |            |  |                            |  |                              |                        |                        |   |                                 |  |                                  |                                  |                               |   |                                  |
| 1: Room air currents minimal or favourable to capture  | 1: Disturbing room air currents  |                      |            |  |                            |  |                              |                        |                        |   |                                 |  |                                  |                                  |                               |   |                                  |
| 2: Contaminants of low toxicity or of nuisance value only.   | 2: Contaminants of high toxicity   |                      |            |  |                            |  |                              |                        |                        |   |                                 |  |                                  |                                  |                               |   |                                  |
| 3: Intermittent, low production.   | 3: High production, heavy use  |                      |            |  |                            |  |                              |                        |                        |   |                                 |  |                                  |                                  |                               |   |                                  |
| 4: Large hood or large air mass in motion  | 4: Small hood-local control only   |                      |            |  |                            |  |                              |                        |                        |   |                                 |  |                                  |                                  |                               |   |                                  |
| <p><b>Personal protection</b></p>  |   |                      |            |  |                            |  |                              |                        |                        |   |                                 |  |                                  |                                  |                               |   |                                  |
| <p><b>Eye and face protection</b></p>  | <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields</li> <li>▶ Chemical goggles.</li> <li>▶ 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], [AS/NZS 1336 or national equivalent]</li> </ul>   |                      |            |  |                            |  |                              |                        |                        |   |                                 |  |                                  |                                  |                               |   |                                  |
| <p><b>Skin protection</b></p>  | <p>See Hand protection below</p>   |                      |            |  |                            |  |                              |                        |                        |   |                                 |  |                                  |                                  |                               |   |                                  |
| <p><b>Hands/feet protection</b></p>  | <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to 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.</p> <p>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</p>  |                      |            |  |                            |  |                              |                        |                        |   |                                 |  |                                  |                                  |                               |   |                                  |

|                         |   |
|-------------------------|---|
|                         | <p>choice.</p> <p>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 moisturizer is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>frequency and duration of contact,</li> <li>chemical resistance of glove material,</li> <li>glove thickness and</li> <li>dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</li> <li>Contaminated gloves should be replaced.</li> </ul> <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.</p> <p>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.</p> <p>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.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>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.</li> <li>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</li> </ul> <p>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.</p> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>polychloroprene.</li> <li>nitrile rubber.</li> <li>butyl rubber.</li> <li>fluorocautchouc.</li> <li>polyvinyl chloride.</li> </ul> <p>Gloves should be examined for wear and/ or degradation constantly.</p> |
| <b>Body protection</b>  | See Other protection below  |
| <b>Other protection</b> | <p>No special equipment needed when handling small quantities.</p> <p><b>OTHERWISE:</b></p> <ul style="list-style-type: none"> <li>Overalls.</li> <li>Barrier cream.</li> <li>Eyewash unit.</li> </ul>  |

## Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|------------------------------------|----------------------|----------------------|------------------------|
| up to 10 x ES                      | P1<br>Air-line*      | -<br>-               | PAPR-P1<br>-           |
| up to 50 x ES                      | Air-line**           | P2                   | PAPR-P2                |
| up to 100 x ES                     | -                    | P3<br>Air-line*      | -                      |
| 100+ x ES                          | -                    | Air-line**           | PAPR-P3                |

\* - Negative pressure demand \*\* - Continuous flow

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 = Sulfox 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)

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

|                         |                      |  |               |
|-------------------------|----------------------|--|---------------|
| <b>Appearance</b>       | white granules       |  |               |
| <b>Physical state</b>   | Divided Solid Powder | <b>Relative density (Water = 1)</b>            | 1.61          |
| <b>Odour</b>            | Not Available        | <b>Partition coefficient n-octanol / water</b> | Not Available |
| <b>Odour threshold</b>  | Not Available        | <b>Auto-ignition temperature (°C)</b>          | Not Available |
| <b>pH (as supplied)</b> | Not Available        | <b>Decomposition temperature</b>               | Not Available |

|  |               |                                  |                |
|--|---------------|----------------------------------|----------------|
| Melting point / freezing point (°C)          | Not Available | Viscosity (cSt)                  | Not Available  |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol)         | 342.15         |
| Flash point (°C)                             | Not Available | Taste                            | Not Available  |
| Evaporation rate                             | Not Available | Explosive properties             | Not Available  |
| Flammability                                 | Not Available | Oxidising properties             | Not Available  |
| Upper Explosive Limit (%)                    | Not Available | Surface Tension (dyn/cm or mN/m) | Not Applicable |
| Lower Explosive Limit (%)                    | Not Available | Volatile Component (%vol)        | Not Available  |
| Vapour pressure (kPa)                        | Not Available | Gas group                        | Not Available  |
| Solubility in water (g/L)                    | Miscible      | pH as a solution (1%)            | Not Available  |
| Vapour density (Air = 1)                     | Not Available | VOC g/L                          | 0.00           |

## SECTION 10 STABILITY AND REACTIVITY

|                                    |   |
|------------------------------------|---|
| Reactivity                         | See section 7   |
| Chemical stability                 | Product is considered stable and hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7   |
| Conditions to avoid                | See section 7   |
| Incompatible materials             | See section 7   |
| Hazardous decomposition products   | See section 5   |

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects




|              |   |
|--------------|---|
| Inhaled      | <p>Levels above 10 micrograms per cubic metre of suspended inorganic sulfates in the air may cause an excess risk of asthmatic attacks in susceptible people.</p> <p>Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.</p> <p>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.</p> <p>Not normally a hazard due to non-volatile nature of product</p> |
| Ingestion    | <p>Acute toxic responses to aluminium are confined to the more soluble forms. Sulfates are not well absorbed orally, but can cause diarrhoea. The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.</p>  |
| Skin Contact | <p>The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>  |
| Eye          | <p>Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.</p>   |
| Chronic      | <p>Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.</p> <p>Exposure to large doses of aluminium has been connected with the degenerative brain disease Alzheimer's Disease.</p> <p>Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis, caused by particles less than 0.5 micron penetrating and remaining in the lung.</p>   |

|                             |   |               |
|-----------------------------|---|---------------|
| Carboline Accelerator A-20  | TOXICITY                                  | IRRITATION    |
|                             | Not Available                             | Not Available |
| aluminium sulfate, hydrated | TOXICITY                                  | IRRITATION    |
|                             | Oral (rat) LD50: 370 mg/kg <sup>[2]</sup> | Not Available |

**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

|                                   |   |                          |   |
|-----------------------------------|---|--------------------------|---|
| 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 available but does not meet the criteria for classification |
|  | - Data available to make classification                            |
|  | - Data Not Available to make classification                        |

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

| Carboline Accelerator A-20 | ENDPOINT      | TEST DURATION (HR) | SPECIES | VALUE         | SOURCE        |
|----------------------------|---------------|--------------------|---------|---------------|---------------|
|                            | Not Available | Not Available      |         | Not Available | Not Available |

| aluminium sulfate, hydrated | ENDPOINT | TEST DURATION (HR) | SPECIES                       | VALUE          | SOURCE |
|-----------------------------|----------|--------------------|-------------------------------|----------------|--------|
|                             | LC50     | 96                 | Fish                          | 0.0028mg/L     | 4      |
|                             | EC50     | 48                 | Crustacea                     | 0.214-1.26mg/L | 2      |
|                             | EC50     | 72                 | Algae or other aquatic plants | 0.075mg/L      | 2      |
|                             | BCF      | 1080               | Fish                          | 0.264mg/L      | 4      |
|                             | NOEC     | 720                | Fish                          | 0.004mg/L      | 4      |

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

For Inorganic Sulfate:

**Environmental Fate** - Sulfates can produce a laxative effect at concentrations of 1000 - 1200 mg/liter, but no increase in diarrhea, dehydration or weight loss. The presence of sulfate in drinking-water can also result in a noticeable taste. Sulfate may also contribute to the corrosion of distribution systems. No health-based guideline value for sulfate in drinking water is proposed.

**Atmospheric Fate:** Sulfates are removed from the air by both dry and wet deposition processes. Wet deposition processes including rain-out (a process that occurs within the clouds) and washout (removal by precipitation below the clouds) which contribute to the removal of sulfate from the atmosphere.

**Terrestrial Fate:** Soil - In soil, the inorganic sulfates can adsorb to soil particles or leach into surface water and groundwater. Plants - Sodium sulfate is not very toxic to terrestrial plants however; sulfates can be taken up by plants and be incorporated into the parenchyma of the plant. Some plants (e.g. corn and Kochia Scoparia) are capable of accumulating sulfate to concentrations that are potentially toxic to ruminants. Jack pine are the most sensitive plant species.

**Aquatic Fate:** Sulfate in water can also be reduced by sulfate bacteria (Thiobacilli) which use them as a source of energy. In anaerobic environments sulfate is biologically reduced to (hydrogen) sulfide by sulfate reducing bacteria, or incorporated into living organisms as source of sulfur. Sodium sulfate is not reactive in aqueous solution at room temperature. Sodium sulfate will completely dissolve, ionize and distribute across the entire planetary "aquasphere". Some sulfates may eventually be deposited with the majority of sulfates participating in the sulfur cycle in which natural and industrial sodium sulfates are not distinguishable.

**Ecotoxicity:** Significant bioconcentration or bioaccumulation is not expected. Algae are the most sensitive to sodium sulfate and toxicity occurs in bacteria from 2500mg/L. Sulfates are not acutely toxic to fish or invertebrates. Daphnia magna water fleas and fathead minnow appear to be the least sensitive species. Activated sludge showed a very low sensitivity to sodium sulfate. Overall it can be concluded that sodium sulfate has no acute adverse effect on aquatic and sediment dwelling organisms. No data were found for long term toxicity.

For Aluminium and its Compounds and Salts:

**Environmental Fate** - As an element, aluminium cannot be degraded in the environment, but may undergo various precipitation or ligand exchange reactions. Aluminium in compounds has only one oxidation state (+3), and would not undergo oxidation-reduction reactions under environmental conditions. Aluminium can be complexed by various ligands present in the environment (e.g., fulvic and humic acids). The solubility of aluminium in the environment will depend on the ligands present and the pH.

**Atmospheric Fate:** Air Quality Standards: none available.

**Aquatic Fate:** The hydrated aluminium ion undergoes hydrolysis. The speciation of aluminium in water is pH dependent. The hydrated trivalent aluminium ion is the predominant form at pH levels below 4. Between pH 5 and 6, the predominant hydrolysis products are Al(OH)<sub>2</sub><sup>+</sup> and Al(OH)<sub>2</sub><sup>+</sup>, while the solid Al(OH)<sub>3</sub> is most prevalent between pH 5.2 and 8.8. The soluble species Al(OH)<sub>4</sub><sup>-</sup> is the predominant species above pH 9, and is the only species present above pH 10. Polymeric aluminium hydroxides appear between pH 4.7 and 10.5, and increase in size until they are transformed into colloidal particles of amorphous Al(OH)<sub>3</sub>, which crystallize to gibbsite in acid waters. When enough silica is present, aluminium is precipitated as poorly crystallized clay mineral species. Hydroxylaluminium compounds can act as both acids and bases in solution. Because of this property, aluminium hydroxides can act as buffers and resist pH changes within the narrow pH range of 4-5. Polymeric aluminium species react slowly in the environment. Aluminium has a strong attraction to fluoride in an acidic environment. Within the pH range of 5 - 6, aluminium complexes with phosphate and is removed from the solution. This may result in depleted nutrient states in surface water.

**Terrestrial Fate:** Soil - Clay soils may act as a sink or a source for soluble aluminium depending on the degree of aluminium saturation on the clay surface. Soil Guideline: none available. Plants - Plant species and cultivars of the same species differ considerably in their ability to take up and translocate aluminium to above-ground parts. Tea leaves may contain very high concentrations of aluminium, >5,000 mg/kg in old leaves. Other plants that may contain high levels of aluminium include clubmosses (also known as ground pines or creeping cedar), a few ferns, Symplocos (Symplocaceae), and Orites (Proteaceae). Aluminium is often taken up and concentrated in root tissue. In sub-alpine ecosystems, the large root biomass of the Douglas fir takes up aluminium and immobilizes it, preventing large accumulation in above-ground tissue. It is unclear to what extent aluminium is taken up into root food crops and leafy vegetables.

**Ecotoxicity:** Aluminium is toxic to many aquatic species thus it is not bioaccumulated to a significant degree in most fish and shellfish; therefore, consumption of contaminated fish does not appear to be a significant aluminium exposure in humans. Bioconcentration of aluminium has also been reported for several aquatic invertebrate species. Aluminium is highly toxic to fish, amphibians and planktonic crustaceans. Aluminium can affect the population growth of algal species with single-celled plants generally more sensitive to aluminium. Fish are generally more sensitive to aluminium than aquatic invertebrates due to gill toxication. The inorganic single unit aluminium species (Al(OH)<sub>2</sub><sup>+</sup>) is thought to be the most toxic At approximately neutral pH values, the toxicity of aluminium is greatly reduced. The solubility of aluminium is also enhanced under alkaline conditions and acute toxicity of aluminium increases from pH 7 to pH 9. However, the opposite relationship was found in other studies. The uptake and toxicity of aluminium in freshwater organisms generally decreases with increasing water hardness under acidic, neutral and alkaline conditions. Complexing agents such as fluoride, citrate and humic substances reduce the availability of aluminium to organisms, resulting in lower toxicity. Silicon can also reduce aluminium toxicity to fish.

### Persistence and degradability

| Ingredient                  | Persistence: Water/Soil | Persistence: Air |
|-----------------------------|-------------------------|------------------|
| aluminium sulfate, hydrated | HIGH                    | HIGH             |

### Bioaccumulative potential

| Ingredient                  | Bioaccumulation        |
|-----------------------------|------------------------|
| aluminium sulfate, hydrated | LOW (LogKOW = -2.2002) |

### Mobility in soil

| Ingredient                  | Mobility          |
|-----------------------------|-------------------|
| aluminium sulfate, hydrated | LOW (KOC = 6.124) |



## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

|                                     |  |
|-------------------------------------|--|
| <b>Product / Packaging disposal</b> | <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▶ Reduction</li> <li>▶ Reuse</li> <li>▶ Recycling</li> <li>▶ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.</p> <ul style="list-style-type: none"> <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> <li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▶ Consult State Land Waste Management Authority for disposal.</li> <li>▶ Bury residue in an authorised landfill.</li> <li>▶ Recycle containers if possible, or dispose of in an authorised landfill.</li> </ul> |
|-------------------------------------|--|

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

|                         |                |
|-------------------------|----------------|
| <b>Marine Pollutant</b> | NO             |
| <b>HAZCHEM</b>          | Not Applicable |

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

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

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

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

| Source  | Product name                | Pollution Category | Ship Type |
|---|-----------------------------|--------------------|-----------|
| IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk | Aluminium sulphate solution | Y                  | 2         |

## SECTION 15 REGULATORY INFORMATION

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

**ALUMINIUM SULFATE, HYDRATED(10043-01-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

| Australia Exposure Standards  |  | Australia Inventory of Chemical Substances (AICS) |  |
|-------------------------------|--|---|--|
| National Inventory            | Status   |   |  |
| Australia - AICS              | Y  |   |  |
| Canada - DSL                  | Y  |   |  |
| Canada - NDSL                 | N (aluminium sulfate, hydrated)  |   |  |
| China - IECSC                 | Y  |   |  |
| Europe - EINEC / ELINCS / NLP | Y  |   |  |
| Japan - ENCS                  | Y  |   |  |
| Korea - KECI                  | Y  |   |  |
| New Zealand - NZIoC           | Y  |   |  |
| Philippines - PICCS           | Y  |   |  |
| USA - TSCA                    | Y  |   |  |
| <b>Legend:</b>                | Y = All ingredients are on the inventory<br>N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets) |   |  |

## SECTION 16 OTHER INFORMATION

|                      |            |
|----------------------|------------|
| <b>Revision Date</b> | 22/04/2018 |
| <b>Initial Date</b>  | 23/04/2018 |

### Other information

#### Ingredients with multiple cas numbers

| Name                        | CAS No  |
|-----------------------------|---|
| aluminium sulfate, hydrated | 7784-31-8, 25102-19-6, 57292-32-7, 16828-11-8, 17927-65-0, 10043-01-3, 16828-12-9 |

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

Continued...



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  
OSF: Odour Safety Factor  
NOAEL :No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index

Powered by AuthorITe, from Chemwatch.