

SAFETY DATA SHEET YM-FAB HIHO CONCENTRATE POWDER



Issue Date: 20.1.2017
Revised: 27.2.2017
Revise before: 19.1.2022
Version: 1.1

Safety data sheet according to WHS and ADG requirements

SECTION 1: IDENTIFICATION OF THE SUBSTANCE:

Product Name: **YM-FAB HIHO CONCENTRATE**
Relevant Use: Water balancer and filter aid for Agricultural Fruit and Vegetable Washing.
Company: Wobelea Pty Ltd
Address: 18 Embrey Court, Pakenham
Phone: 61 + (3) 5940 1077
Emergency Telephone: Poison Information Australia 13 11 26
Emergency Other: Poison Information New Zealand 0800 764 766
Emergency: 61 + (3) 5997 1690 AH
Emergency other number: 0427 367 561

SECTION 2: HAZARDS IDENTIFICATION

Classification of the mixture

Hazardous Chemical and Non Dangerous Good as per % of active ingredients according to WHS Regulations and the ADG Code.

Poisons Schedule: Not applicable
Classification: Low rating – Skin irritation, Eye irritation category 2A, Aquatic hazard, specific target organ toxicity.
Classification drawn from HSIS and Wobelea Pty Ltd.

Label Elements



GHS Label elements

SIGNAL WORD

WARNING

Hazard Statement

May intensify fire; oxidiser
May cause skin irritation
May cause serious eye irritation
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause respiratory irritation if inhaled.
May cause harmful effects to aquatic life
May cause skin dryness and cracking

Supplementary statement

Not applicable

Precautionary Statements Prevention

Use in a well ventilated area or wear respiratory protection
Keep/store away from heat/sparks/open flames – No smoking
Take precaution to avoid mixing with combustibles/organic material
Avoid breathing dust fumes
Wear protective gloves/protective clothing/eye protection/face protection

SECTION 2: HAZARDS IDENTIFICATION - Cont

Precautionary Statements Response

IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing
Take off contaminated clothing and wash before reuse
If experiencing respiratory systems: Call a POISON CENTRE or a doctor
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so.
Continue rinsing. If eye irritation persists seek medical advice.
In case of fire use alcohol resistant foam or fine spray/water fog for extinction
IF ON SKIN: Wash with plenty of soap and water. Seek medical advice
Call a POSION CENTRE or doctor if you feel unwell.

Precautionary Statement Storage

Store locked up
Store in a well ventilated place. Keep container tightly closed

Precautionary Statement Disposal

Dispose of contents / container in accordance with local regulations

SECTION 3: COMPOSTION / INFORMATION ON INGREDIENTS

Substances

CAS Number	% (weight)	Name
7775-27-1	< 15%	Sodium Persulphate
10124-56-8	< 10%	Sodium Hexametaphosphate
144-55-8	< 80%	Sodium Bicarbonate
497-19-8	< 20%	Sodium Carbonate

SECTION 4: FIRST AID

Eye Contact: If this product comes into contact with eye:

- Wash out immediately with fresh water for at least 15 minutes
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids
- Seek medical attention without delay; if pain persists or recurs seek medical advice
- Removal of contact lenses after an eye injury should only be undertaken by a skilled person.

Skin Contact: If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear
- Flush skin and hair with running water and soap if available
- Seek medical attention in event of irritation

Inhalation: If inhalation occurs:

- If fumes, aerosols or combustion products are inhaled remove from contaminated area
- Move from area and give fresh air
- Lay patient down. Keep warm and rested. Seek medical attention if breathing becomes difficult
- Prosthesis such as false teeth, which may block airway should be removed where possible prior to initiating first aid.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, doctor without delay

Ingestion: If ingested:

- If swallowed do NOT induce vomiting
- Contact a Poisons Centre or a doctor to seek further advice
- Urgent hospital treatment may be needed
- Qualified first aid personnel should treat patient following observation and employing supportive measures as indicated by the patients condition
- If the services of a medical officer or doctor are available the patient should be placed in their care and a copy of SDS provided. Further action will be the responsibility of the medical specialist.
- If medical attention is not available on the worksite or surroundings send the patient to a hospital with a copy of SDS
- Only give a glass of water and/or induce vomiting if you are advised by Poisons Centre or Doctor.

Indication of any immediate medical attention and special treatment needed:

The severity of the symptoms described will vary dependent on the concentration and the length of exposure. If adverse symptoms develop the casualty should be transferred to hospital as soon as possible with a copy of SDS

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

SECTION 4: FIRST AID – Cont..

Indication of any immediate medical attention and special treatment needed for Sodium carbonate

For acute or short-term repeated exposures to highly alkaline materials:

- ▶ Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- ▶ Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary. Oxygen is given as indicated.
- ▶ The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- ▶ Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure. INGESTION:

- ▶ Milk and water are the preferred diluents
 - No more than 2 glasses of water should be given to an adult.
 - ▶ Neutralising agents should never be given since exothermic heat reaction may compound injury.
 - * Catharsis and emesis are absolutely contra-indicated.
 - * Activated charcoal does not absorb alkali.
 - * Gastric lavage should not be used. Supportive care involves the following:
 - ▶ Withhold oral feedings initially.
 - ▶ If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
 - ▶ Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
 - ▶ Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).
- SKIN AND EYE:
- ▶ Injury should be irrigated for 20-30 minutes.
- Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

SECTION 5: FIRE FIGHTING MEASURES

Extinguishing media

Fire: USE FLOODING QUANTITIES OF WATER FROM A PROTECTED POSITION

Note: < 10% active ingredient as Sodium Persulphate states do not use: dry chemical, CO2 foam or halogenated-type extinguishers

Special hazards arising from the substrate or mixture

Fire incompatibility

- Avoid storage with reducing agents
- Avoid any contamination of this material especially with oxidising agents ie nitrates, oxidising acids, chlorine bleaches, pool chlorine etc as ignition may result

Advice for Fire Fighters

Fire Fighting

- Note: < 10% active ingredient as Sodium Persulphate states do not use: dry chemical, CO2 foam or halogenated-type extinguishers
- Alert fire brigade and tell them location and nature of hazard
- Use fire-fighting procedures suitable for surrounding area
- May be reactive and/or explosively reactive
- Wear full body protective clothing with breathing apparatus
- Prevent by any means available spillage from entering drains or water courses

Fire explosion/ hazard

- Will not burn but may increase intensity of fire - one part of mixture will exhibit difficult combustion or is difficult to ignite
- Not considered a significant fire risk, however containers may burn
- Heating may cause expansion or decomposition leading to violent rupture of containers
- Decomposition may produce toxic fumes of sulfur oxides (SOx), sodium monoxide (Na2O), carbon monoxide (CO), carbon dioxide (CO2) other pyrolysis products typical of burning organic material, water vapour, sodium carbonate, phosphorous oxides (POx) and metal oxides. May omit corrosive fumes.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills

Clean up all spills immediately

- Avoid breathing dust and contact with skin and eyes
- Wear protective clothing, gloves safety glasses and dust respirator
- Use dry clean up procedures and avoid generating dust
- Remove all ignition sources

Major spills

Moderate hazard

- CAUTION Advise personnel in area
- Alert emergency services and tell them location and nature of hazard
- Control personal contact by wearing protective clothing.
- See Section 12 for environmental information
- Local authorities should be advised if significant spillages cannot be contained.

Personal protect equipment advice is contained in Section 8 of the SDS

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Safe Handling

- Avoid all personal contact including inhalation
- Wear protective clothing when risk of exposure occurs
- Use in a well ventilated area
- Always wear protective equipment and wash off any spillage from clothing
- Keep material away from light, heat, flammables or combustibles

Safe Handling

Prevent concentration in hollows and sumps

- Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust -air mixtures and result in a fire of dust explosion (including secondary explosions)
- Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks and flame
- Establish good housekeeping practices
- Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds

Other Information

- Store in original containers
- Keep containers sealed
- Store in cool dry area protected from environmental extremes
- Store away from incompatible materials and foodstuff containers

In addition Goods of Class 5.1, packing Group III should be stored in packages and be separated from buildings, tanks and compounds containing other dangerous goods in tanks, and from property boundaries by a distance of at least 5 metres.

Conditions for safe storage, including any incompatibilities

Suitable container

Do not repack. Use containers supplied by manufacturer

- Lined metal can, lined metal pail/can, plastic pail, poly-liner drum
- For solids and materials with a viscosity of at least 2680 cST (23 deg.C) removable head packaging and cans with friction closures may be used

Storage incompatibility

Avoid strong acids, acid chlorides, acid anhydrides and chloroformates

- Avoid reaction with chlorine trifluoride and bromine trifluoride
- These trifluorides are hypergolic oxidizers. They ignite on contact (without external heat or ignition) with recognized fuels. Contact with these materials following an ambient or slightly elevated temperature is often violent and may produce ignition.

- Avoid contact with copper, aluminium and their alloys
- Phosphates are incompatible with oxidizing and reducing agents
- Phosphates are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides.
- Partial oxidation of phosphate by oxidizing agents may result in the release of toxic phosphorous oxides.
- Avoid reaction with oxidizers

Segregate from mono-ammonium phosphate, acids and strong oxidizers. Reacts rapidly with acidic materials generates carbon dioxide gas, which may pressurize, even violently rupture containers.

0	0	0	+	+	+	X
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	Sodium persulphate	Sodium Persulphate	Not available	Not available	0.1 mg/m ³	Not available
Australia Exposure Standards	Sodium persulphate	Sodium Persulphate	Not available	Not available	0.1 mg/m ³	Not available
			TEEL -1	TEEL -2	TEEL-3	
Australia Exposure Standards	Sodium bicarbonate	Sodium bicarbonate	13 mg/m ³	140 mg/m ³	840 mg/m ³	
Australia Exposure Standards	Sodium hexametaphosphate	Sodium phosphate, tribasic, (Sodium hexametaphosphate; Calgon)	19 mg/m ³	200mg/m ³	1200 mg/m ³	
Component	Poland	Portugal	Romania	Russia		
Calcium sulfate	10.0 mg/m ³ TWA <2% free crystalline silica and containing no asbestos	10 mg/m ³ TWA inhalable fraction	Not determined	Not determined		
Crystalline silica (impurity)	2 mg/m ³ TWA >50% free crystalline silica total inhalable dust 0.3 mg/m ³ TWA >50% free crystalline silica respirable dust 4.0 mg/m ³ TWA 2% to 50% free crystalline silica total inhalable dust 1.0 mg/m ³ TWA 2% to 50% free crystalline silica respirable dust	0.025 mg/m ³ TWA respirable fraction	Not determined	1 mg/m ³ MAC 3 mg/m ³ STEL 1 mg/m ³ TWA aerosol Fibrogenic substance		
Component	Spain	Switzerland	Turkey	UK		
SECTION 8:	EXPOSURE CONTROLS	PERSONAL PROTECTION	- cont..			

Calcium sulfate	10 mg/m ³ VLA-ED this value is for the particulated matter that is free from Asbestos and contains less than 1% of Crystalline silica	3 mg/m ³ MAK respirable	Not determined	Not determined
Crystalline silica (impurity)	0.1 mg/m ³ VLA-ED respirable fraction	0.15 mg/m ³ MAK respirable	Not determined	0.3 mg/m ³ STEL calculated respirable 0.1 mg/m ³ TWA respirable

Exposure Controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	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 cannot be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Suitability and durability of glove type is dependent on usage. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. polychloroprene. nitrile rubber. butyl rubber. Polyvinyl chloride (PVC) Wear safety footwear or safety gumboots E.g Rubber Note: This chemical is in a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application. Check with manufacturer of PPE if unsure for further advice.
Body protection	See Other protection below
Other protection	Overalls. P.V.C. apron. Barrier cream. Eye wash unit For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot and shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds.
Thermal hazards	Not Available

Respiratory protection; - Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 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 Air-line*	- -	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3 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 =Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ 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

Appearance	White odourless crystalline powder. Decomposes in the presence of alcohol, Ag, and air. Solubility in water @ 20 C 549 g/l.		
Physical state	Divided Solid	Relative density (Water = 1)	Not available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not available.
pH (as supplied)	Not Applicable	Decomposition temperature	>400
Melting point / freezing point	70 – 600 Decomposes	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling	Not available.	Molecular weight (g/mol)	Not available
Flash point (°C)	Non Flammable	Taste	Not Available
Evaporation rate	Not Applicable	Explosive properties	Not Available
Flammability	Non Flammable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Nil @ 38 C.
Vapour pressure (kPa)	Not available.	Gas group	Not Available
Solubility in water (g/L)	Miscible	pH as a solution (1%)	8.0
Vapour density (Air = 1)	Not available.	VOC g/L	Not Available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical Stability	<p>Unstable in the presence of incompatible materials.</p> <p>Product is considered stable under normal handling conditions and hazardous polymerisation will not occur.</p> <p>Note: many of the salts of peroxy-acids are unstable or explosive and are capable of initiation by heat, friction or impact and all are powerful oxidants.</p>
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>The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Inhalation of dust in high concentration may cause irritation of respiratory system. The body's response to such irritation can cause further lung damage.</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>Inhalation may cause a sore throat, coughing and sneezing.</p>
Ingestion	<p>Although ingestion is not thought to produce harmful effects (as classified under EC Directives), the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident.</p> <p>Ingestion of large quantities may cause abdominal pain and gastro-intestinal distention.</p> <p>Accidental ingestion of <u>large quantity of material</u> may be harmful, however due to low % of sulphate in the product this statement is a warning only; animal experiments indicate that ingestion of less than 150gm may be fatal or may produce serious damage to the health of the individual. Sulphates are used extensively as food additives and this indicates a good tolerance of small amounts.</p> <p>Note inorganic polyphosphates are used extensively in domestic and industrial products. Experiments on rats showed kidney damage, growth retardation and tetany due to low calcium. Effects can include vomiting, tiredness, fever, diarrhea, low blood pressure, slow pulse, cyanosis, spasms of the wrist, coma and severe body spasms.</p>
Skin contact	<p>This material may cause mild inflammation of the skin on prolonged contact in some persons. The material may accentuate any pre-existing dermatitis condition</p> <p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Irritation and skin reactions are possible with sensitive skin</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p>Undiluted inorganic phosphates may severely irritate the skin, but in typical cosmetic formulations (where they act as chelators) they are only mildly irritating. Even at concentrations of 1%, no irritation was observed in sensitive individuals.</p>
Eye	<p>Limited evidence or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals. Prolonged eye contact may cause inflammation characterised by a temporary redness of the conjunctiva (similar to windburn).</p> <p>Inorganic phosphates may cause eye irritation on contact in some persons. The severity of eye irritation depends on concentration of product in formula.</p> <p>Alkaline salts may be intensely irritating to the eyes and precautions should be taken to ensure direct eye contact is avoided. Damage may not present until 24 hours after instillation.</p>

Chronic	<p>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.</p> <p>Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>In long-term animal studies, inorganic polyphosphates produced growth inhibition, increased kidney weights, bone decalcification, enlargement of the parathyroid gland, inorganic phosphate in the urine, focal necrosis of the kidney and alterations of muscle fibre size. Inorganic phosphates have not been shown to cause cancer, genetic damage or reproductive or developmental damage in animal tests.</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> <p>Sodium phosphate dibasic can cause stones in the kidney, loss of mineral from the bones and loss of thyroid gland function.</p> <p>Persulphate exposure commonly manifests itself in the form of a skin rash, eczema and respiratory conditions such as asthma. Allergy may develop after repeated and prolonged exposures depending on concentration of formula.</p>												
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Legend	<p>1. Value obtained from Europe ECHA Registered Substances - Acute toxicity</p> <p>2.* Value obtained from manufacturer's SDS.</p> <p>Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of Chemical Substances</p>												
ASSORTED ACTIVES	<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>												
SODIUM HEXAMETAPHOSPHATE	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyper reactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance.</p> <p>Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.</p>												

SODIUM PERSULPHATE	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyper reactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance.</p> <p>Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.</p> <p>Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins.</p> <p>Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.</p> <p>Oral (Rat, adult female) LD50: 920 mg/kg *Skin: irritant * *Rhein Perchemie MSDS</p>
SODIUM BICARBONATE	<p>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.</p> <p>(human-infant) TDLo: 1260 mg/kg Skin (human): 30 mg/3d-I-mild</p>
DENSE SODA ASH	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyper reactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.</p> <p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.</p>
SODIUM CARBONATE	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyper reactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.</p> <p>for sodium carbonate:</p> <p>Sodium carbonate has no or a low skin irritation potential but it is considered irritating to the eyes. Due to the alkaline properties an irritation of the respiratory tract is also possible.</p> <p>No valid animal data are available on repeated dose toxicity studies by oral, dermal, inhalation or by other routes for sodium carbonate. A repeated dose inhalation study, which was not reported in sufficient detail, revealed local effects on the lungs which could be expected based on the alkaline nature of the compound.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.</p>

Acute toxicity	X	Carcinogenicity	Ø
Skin irritation/Corrosion	✓	Reproductivity	Ø
Serious eye damage/Irritation	✓	STOT – Single exposure	✓
Respiratory or skin sensitisation	✓	STOT – Repeated exposure	Ø
Mutagenicity	Ø	Aspiration hazard	Ø

Legend: X – Data available but does not fill the criteria for classification

✓ – Data required to make classification available

Ø – Data Not Available to make classification

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity

Ingredient	Endpoint	Test Duration	Species	Value	Source
Sodium persulphate	LC50	96	Fish	76.3mg/L	2
	EC50	120	Crustacea	11mg/L	2
	EC50	48	Crustacea	21.22mg/L	2
	NOEC	120	Crustacea	5mg/L	2
	EC50	72	Algae or other aquatic plants	83.7mg/L	2
Sodium hexametaphosphate	LC50	96	Fish	>100mg/L	2
	EC50	48	Crustacea	>485mg/L	2
	EC50	72	Algae or other aquatic plants	>100mg/L	2
	NOEC	72	Algae or other aquatic plants	32mg/L	2
Sodium bicarbonate	LC50	96	Fish	658.217mg/L	3
	EC50	4	Algae or other aquatic plants	52mg/L	4
	EC50	96	Algae or other aquatic plants	650mg/L	4
	EC50	48	Crustacea	1020mg/L	2
	NOEC	1512	Algae or other aquatic plants	>45mg/L	2
Sodium carbonate	EC50	48	Crustacea	=176mg/L	1
	EC50	96	Algae or other aquatic plants	242 mg/L	4
	NOEC	16	Crustacea	424 mg/L	4
	LC50	96	Fish	300mg/L	2
	EC50	96	Crustacea	67 mg/L	2
Legend	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data				

Sodium hexametaphosphate:

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.

For Phosphate:

The principal problems of phosphate contamination of the environment relates to eutrophication processes in lakes and ponds. Phosphorus is an essential plant nutrient and is usually the limiting nutrient for blue-green algae.

Aquatic Fate: Lakes overloaded with phosphates is the primary catalyst for the rapid growth of algae in surface waters. Planktonic algae cause turbidity and flotation films.

DO NOT discharge into sewer or waterways.

Sodium Persulphate:

For Inorganic Sulfate:

Environmental Fate - Sulfates can produce a laxative effect at concentrations of 1000 - 1200 mg/litre, 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.

For Persulfates:

Environmental Fate: Persulfates will readily degrade benzene, xylene, toluene, ethylbenzene and chlorinated benzenes to mineralized end products. Reaction rates with chlorinated solvents are much slower. Aqueous persulfates are expected to degrade in the environment via several mechanisms, (e.g. breakdown in water, decomposition stimulated by the presence of metals, and reactions with organic chemicals in the soil or water).

Atmospheric Fate: There are no data available for breakdown of these substances in sunlight, (photo degradation).

DO NOT discharge into sewer or waterways.

[Ecotoxicity:|Fish LC50 (96 h): Poecillia reticulata 323 mg/l (OECD TG203)|Daphnia LC50 (48 h): 357 mg/l OECD TG202|Algal IC10 (96 h): Scenedesmus acuminatus 33 mg/l|Bacterial toxicity: hydrolysis reduction to oxygen, sodium and sulfate

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Sodium bicarbonate	Low	Low
Sodium hexametaphosphate	No data available for all ingredients	No data available for all ingredients
Sodium persulphate	No data available for all ingredients	No data available for all ingredients
Sodium carbonate	Low	Low

Bio-accumulative potential

Ingredient	Bio-accumulation
Sodium bicarbonate	LOW (logKOW = 0.4605)
Sodium hexametaphosphate	No data available for all ingredients
Sodium persulphate	No data available for all ingredients
Sodium carbonate	LOW (LogKOW = -0.4605)

Mobility in Soil

Ingredient	Mobility
Sodium bicarbonate	HIGH (KOC = 1)
Sodium hexametaphosphate	No data available for all ingredients
Sodium persulphate	No data available for all ingredients
Sodium carbonate	HIGH (KOC=1)


SECTION 13 – DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	<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: Reduction Reuse Recycling Disposal (if all else fails)</p> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <p>DO NOT allow wash water from cleaning or process equipment to enter drains. It may be necessary to collect all wash water for treatment before disposal.</p> <p>In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority.</p> <p>Recycle wherever possible or consult manufacturer for recycling options. Recycle container or dispose of in an authorised landfill.</p> <p>Consult State Land Waste Management Authority for further information.</p>
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SECTION 14 – TRANSPORT INFORMATION

Labels required

Ingredient	Marine Pollutant	HAZCHEM	Label
Sodium bicarbonate	NO	Not applicable	
Sodium hexametaphosphate	NO	Not applicable	
Sodium carbonate	NO	Not applicable	
Sodium persulphate 98%	NO	1Z	
POOLKARE CHEMICALS HIHO	NO	Not applicable	

Sodium bicarbonate, Sodium hexametaphosphate,

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

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

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

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

Sodium persulphate 100% ACTIVE

UN number	1505		
UN proper shipping name	SODIUM PERSULPHATE		
Transport hazard class(es)	Class 5.1		

	Sub risk	Not Applicable		
Packing Group		III		
Environmental hazard		Not Applicable		
Special precautions for user		Special provisions	Not Applicable Limited quantity	5 kg

Air transport (ICAO-IATA/DGR)

UN number	1505
UN proper shipping name	SODIUM PERSULPHATE
Transport hazard class(es)	ICAO/IATA Class 5.1 ICAO/IATA Sub risk Not Applicable
Packing Group	III
Environmental hazard	Not Applicable
Special precautions for user	Special provisions Not Applicable Cargo Only Packing Instructions = 563 Cargo Only Maximum Qty / Pack = 100 kg Passenger and Cargo Packing Instructions = 559 Passenger and Cargo Maximum Qty / Pack = 25 kg Passenger and Cargo Limited Quantity Packing Instructions = Y546 Passenger and Cargo Limited Maxi Qty / Pack = 10 kg

Sea transport (IMDG-Code / GGBVSee)

number	1505
UN proper shipping name	SODIUM PERSULPHATE
Transport hazard class(es)	IMDG Class 5.1 IMDG Sub risk Not Applicable
Packing Group	III
Environmental hazard	Not Applicable
Special precautions for user	EMS Number F-A, S-Q Special provisions Not Applicable Limited Quantities 5 kg

Transport in bulk according to Annex 11 of MARPOL and the IBC code – Not applicable

Sodium carbonate

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	Sodium carbonate solution	Z	3

SECTION 15 – REGULATORY INFORMATION

Safety, Health and Environmental regulations / legislation specific for the substance and/or mixture

SODIUM BICARBONATE(144-55-8), SODIUM HEXAMETAPHOSPHATE (10124-56-8) are found on the following regulatory lists:-

Australia Inventory of Chemical Substances (AICS)

SODIUM PERSULPHATE (7775-27-1), SODIUM CARBONATE(497-19-8) are found on the following regulatory lists:-

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (sodium persulfate), N (sodium hexametaphosphate), N (sodium bicarbonate), N (sodium carbonate)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	Y = All ingredients are on the inventory 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

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: Bio Concentration Factors BEI: Biological Exposure Index

BEI : Biological exposure Index

Disclaimer:

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.

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Please note this product is a blended product and does not take into the low concentration of some of the actives. Therefore this SDS should be used a guideline only. Further information can be obtained from the manufacturer if required.

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END OF SAFETY DATA SHEET *****