

Radiant Brightens Whites or Colours Laundry Powder

PZ Cussons Australia Pty Ltd

Chemwatch Hazard Alert Code: 3

Chemwatch: 40-5763

Version No: 6.1

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

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

Product Identifier

Product name	Radiant Brightens Whites or Colours Laundry Powder
Chemical Name	Not Applicable
Synonyms	Radiant Brilliant Whites Sharper Colours Laundry Powder
Chemical formula	Not Applicable
Other means of identification	Not Available

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

Relevant identified uses	<p>Laundry powder - main wash.</p> <p>The chemicals in this group are salts of structurally related linear alkylbenzene sulfonates (LASs) that have surfactant properties. Linear alkylbenzene sulfonates (LAS) are, by volume, the most important group of synthetic anionic surfactant today. LAS are mainly used in laundry detergents and cleaning agents. LAS are frequently used as the sodium salts as the sole surfactant in a formulation or in conjunction with other anionic, nonionic or cationic surfactants.</p> <p>The chemicals in this group can have an alkyl chain between 10 and 16 carbon atoms.</p>
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Details of the manufacturer or supplier of the safety data sheet

Registered company name	PZ Cussons Australia Pty Ltd	
Address	Building A, Level 1, 13-15 Compark Circuit Mulgrave VIC 3170 Australia	
Telephone	1800 809 282	
Fax	+61 3 8545 2799	
Website	www.pzcussons.com	
Email	PZCANZCommunicatons@pzcussons.com	

Emergency telephone number

Association / Organisation	Poisons Information Centre (Aus)	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	13 11 26	+61 1800 951 288
Other emergency telephone numbers	Not Available	+61 3 9573 3188

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

Poisons Schedule	Not Applicable
Classification [1]	Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 1, Acute Toxicity (Inhalation) Category 4, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Hazardous to the Aquatic Environment Acute Hazard Category 3, Hazardous to the Aquatic Environment Long-Term Hazard Category 3, Sensitisation (Respiratory) Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

Label elements

Hazard pictogram(s)	
Signal word	Danger

Hazard statement(s)

H315	Causes skin irritation.
H318	Causes serious eye damage.
H332	Harmful if inhaled.

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H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statement(s) Prevention

P261	Avoid breathing dust/fumes.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.

Precautionary statement(s) Response

P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician/first aider.

Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
497-19-8	30-60	<u>sodium carbonate</u>
7757-82-6	10-30	<u>sodium sulfate</u>
8046-53-5	10-30	<u>(linear)alkylbenzenesulfonic acid, sodium salts</u>
13870-28-5	1-10	<u>sodium disilicate</u>
Not Available	<1	perfume
9014-01-1	<1	<u>protease</u>
9012-54-8	<1	<u>cellulase</u>
Not Available	<1	speckles - green/red
9000-92-4	<0.2	<u>amylase</u>
Not Available	balance	Ingredients determined not to be hazardous

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

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold eyelids apart and flush the eye continuously with running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay.
Ingestion	<ul style="list-style-type: none"> ▶ Immediately give a glass of water. ▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

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Treat symptomatically.

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 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

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

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves in the event of a fire. ▶ Prevent, by any means available, spillage from entering drains or water courses. ▶ Use fire fighting procedures suitable for surrounding area.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions. ▶ 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 or dust explosion (including secondary explosions). ▶ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion. <p>Combustion products include: carbon monoxide (CO) carbon dioxide (CO₂) hydrogen cyanide nitrogen oxides (NO_x) sulfur oxides (SO_x) other pyrolysis products typical of burning organic material. May emit poisonous fumes.</p>
HAZCHEM	Not Applicable

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ▶ Remove all ignition sources. ▶ Clean up all spills immediately. ▶ Avoid contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment.
Major Spills	<p>Moderate hazard.</p> <ul style="list-style-type: none"> ▶ CAUTION: Advise personnel in area. ▶ Alert Emergency Services and tell them location and nature of hazard. ▶ Control personal contact by wearing protective clothing.

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

SECTION 7 Handling and storage

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Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. ▶ 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 or 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	<ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry area protected from environmental extremes. ▶ Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ DO NOT use aluminium or galvanised containers ▶ Polyethylene or polypropylene container. ▶ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	<ul style="list-style-type: none"> ▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. ▶ Avoid contact with copper, aluminium and their alloys.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
sodium carbonate	7.6 mg/m ³	83 mg/m ³	500 mg/m ³
sodium sulfate	9.8 mg/m ³	110 mg/m ³	650 mg/m ³


Ingredient	Original IDLH	Revised IDLH
sodium carbonate	Not Available	Not Available
sodium sulfate	Not Available	Not Available
(linear)alkylbenzenesulfonic acid, sodium salts	Not Available	Not Available
sodium disilicate	Not Available	Not Available
protease	Not Available	Not Available
cellulase	Not Available	Not Available
amylase	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
sodium carbonate	E	≤ 0.01 mg/m ³
sodium sulfate	E	≤ 0.01 mg/m ³
sodium disilicate	E	≤ 0.01 mg/m ³
protease	E	≤ 0.01 mg/m ³

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

Exposure controls

Appropriate engineering controls	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p>
Personal protection	
Eye and face protection	<ul style="list-style-type: none"> ▶ 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

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Hands/feet protection	<p>NOTE:</p> <ul style="list-style-type: none"> ▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to 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 choice.</p> <p>Personal hygiene is a key element of effective hand care.</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"> ▶ polychloroprene. ▶ nitrile rubber. ▶ butyl rubber.
	Body protection
Other protection	<ul style="list-style-type: none"> ▶ Overalls. ▶ P.V.C apron. ▶ Barrier cream. ▶ Skin cleansing cream.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the: "Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the *computer-generated* selection:

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Material	CPI
BUTYL	C
NATURAL RUBBER	C
NEOPRENE	C
NITRILE	C
PVA	C
VITON	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

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

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

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- 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.
- Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
- 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 powder with green and red speckles; miscible with water.		
Physical state	Divided Solid	Relative density (Water = 1)	0.700
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 (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available

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Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	10.5
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	<p>Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful.</p> <p>The material can cause respiratory irritation in some persons. 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 of sodium carbonate may cause coughing, sore throat, difficulty breathing. Fluid accumulation in the lungs can occur with exposure to high doses or over a long period of time.</p>
Ingestion	<p>The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models).</p> <p>Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.</p> <p>Ingestion of anionic surfactants may produce diarrhoea, bloated stomach, and occasional vomiting.</p>
Skin Contact	<p>The material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.</p> <p>Anionic surfactants can cause skin redness and pain, as well as a rash. Cracking, scaling and blistering can occur.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Contact with concentrated solutions of sodium carbonate may cause tissue damage - "soda ulcers" .</p>
Eye	<p>If applied to the eyes, this material causes severe eye damage.</p> <p>Direct eye contact with some anionic surfactants in high concentration can cause severe damage to the cornea. Low concentrations can cause discomfort, excess blood flow, and corneal clouding and swelling. Recovery may take several days.</p> <p>510sodacarb</p> <p>Alkaline salts may cause severe irritation to the eyes and precautions should be taken to avoid direct eye contact.</p>
Chronic	<p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>There is limited evidence that, skin contact with this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>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>Dusts produced by proteins can sometimes sensitise workers like other foreign bodies. Symptoms include asthma appearing soon after exposure, with wheezing, narrowing of the airways and breathing difficulties.</p> <p>Prolonged or repeated skin contact may cause degreasing, followed by drying, cracking and skin inflammation.</p> <p>Long term inhalation of sodium carbonate may result in nose damage and lung disease.</p> <p>Exposure to sulfonates can cause an imbalance in cellular salts and therefore cellular function. Airborne sulfonates may be responsible for respiratory allergies and, in some instances, minor dermal allergies.</p> <p>There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p>

Radiant Brightens Whites or Colours Laundry Powder	TOXICITY	IRRITATION
	Not Available	Not Available
sodium carbonate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[2]	Eye (rabbit): 100 mg/24h moderate
	Oral (Rat) LD50: 2800 mg/kg ^[2]	Eye (rabbit): 100 mg/30s mild
		Eye (rabbit): 50 mg SEVERE
		Eye: adverse effect observed (irritating) ^[1]
	Skin (rabbit): 500 mg/24h mild	

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		Skin: no adverse effect observed (not irritating) ^[1]
sodium sulfate	TOXICITY	IRRITATION
	Inhalation(Rat) LC50: >2.4 mg/4h ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Oral (Rat) LD50: >2000 mg/kg ^[1]	Skin: no adverse effect observed (not irritating) ^[1]
(linear)alkylbenzenesulfonic acid, sodium salts	TOXICITY	IRRITATION
	Oral (Rat) LD50: 800 mg/kg ^[2]	Not Available
sodium disilicate	TOXICITY	IRRITATION
	Inhalation(Rat) LC50: >3.51 mg/4h ^[1]	Eye: adverse effect observed (irreversible damage) ^[1]
	Oral (Rat) LD50: 1153 mg/kg ^[2]	Skin (human): 250 mg/24h SEVERE
		Skin (rabbit): 250 mg/24h SEVERE
		Skin: no adverse effect observed (not irritating) ^[1]
protease	TOXICITY	IRRITATION
	Oral (Rat) LD50: 1800 mg/kg ^[1]	Eye: adverse effect observed (irritating) ^[1]
		Skin: adverse effect observed (irritating) ^[1]
cellulase	TOXICITY	IRRITATION
	Inhalation(Rat) LC50: >4.72 mg/4h ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Oral (Rat) LD50: >2960 mg/kg ^[1]	Skin: no adverse effect observed (not irritating) ^[1]
amylase	TOXICITY	IRRITATION
	Oral (Rat) LD50: >15000 mg/kg ^[2]	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	

SODIUM SULFATE	Equivocal Tumorigen by RTECS criteria. Reproductive effector in mice.
(LINEAR)ALKYLBENZENESULFONIC ACID, SODIUM SALTS	* Gosselin, etal, Clinical Toxicology of Commercial Products. For alkaryl sulfonate petroleum additives: Acute toxicity: Existing data indicates relatively low acute toxicity. Animal testing suggested diarrhea and reduced food intake, which is consistent with the detergents in an oil-based vehicle having an irritating effect on the gastrointestinal tract. Subchronic toxicity: Existing data suggests minimal toxicity after chronic exposure by mouth. Repeated skin contact and inhalation in animals caused injury to the skin and the lungs, respectively. Reproductive and Developmental Toxicity: Existing data did not show this group of substances to cause reproductive or developmental toxicity.
SODIUM DISILICATE	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
PROTEASE	The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
Radiant Brightens Whites or Colours Laundry Powder & SODIUM CARBONATE & SODIUM SULFATE & SODIUM DISILICATE & PROTEASE	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.
Radiant Brightens Whites or Colours Laundry Powder & PROTEASE & CELLULASE & AMYLASE	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. 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.
Radiant Brightens Whites or Colours Laundry Powder & CELLULASE & AMYLASE	No significant acute toxicological data identified in literature search.
Radiant Brightens Whites or Colours Laundry Powder & SODIUM SULFATE	For sodium sulfate: The acute toxicity of sodium sulfate has not been established, but existing data indicate very low acute toxicity. Very high doses cause severe diarrhea. Sodium sulfate is not irritating to the skin, and only slightly irritating to the eyes. It is highly unlikely to cause sensitizing effects. There is no data regarding genetic toxicity except for a single negative test.
Radiant Brightens Whites or Colours Laundry Powder & SODIUM CARBONATE	For sodium carbonate: Sodium carbonate has little potential for skin irritation, but is irritating to the eyes. Due to its alkaline properties, irritation of the airways is also possible. There is no data available for animal studies regarding the repeated dose toxicity of sodium carbonate by any route. There is no evidence that sodium carbonate causes whole-body effects under normal handling and use. Sodium carbonate does not reach the foetus or the reproductive organs, which shows that there is no risk for developmental or reproductive toxicity.
Radiant Brightens Whites or Colours Laundry Powder & SODIUM CARBONATE & SODIUM DISILICATE	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.

Radiant Brightens Whites or Colours Laundry Powder

Radiant Brightens Whites or Colours Laundry Powder & (LINEAR)ALKYLBENZENESULFONIC ACID, SODIUM SALTS

Linear alkyl benzene sulfonates are derived from strong corrosive acids. Animal testing has shown they can cause skin reactions, eye irritation, sluggishness, passage of frequent watery stools, weakness and may lead to death. They may also react with surfaces of the mouth and intestines, depending on the concentration exposed to. There is no evidence of harm to the unborn baby or tendency to cause cancer.

Acute Toxicity	✓	Carcinogenicity	✗
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

Radiant Brightens Whites or Colours Laundry Powder	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
sodium carbonate	NOEC(ECx)	48h	Fish	0.0106mg/l	4
	LC50	96h	Fish	300mg/l	4
	EC50	72h	Algae or other aquatic plants	>800mg/l	2
	EC50	96h	Algae or other aquatic plants	242mg/l	4
	EC50	48h	Crustacea	156.6-298.9mg/l	4
sodium sulfate	LC50	96h	Fish	ca.56-790mg/l	1
	EC50	48h	Crustacea	2564mg/l	1
	NOEC(ECx)	1h	Algae or other aquatic plants	0.011mg/L	4
	EC50	96h	Algae or other aquatic plants	1562.44mg/L	4
	EC50	72h	Algae or other aquatic plants	1206-1637mg/l	4
(linear)alkylbenzenesulfonic acid, sodium salts	NOEC(ECx)	168h	Fish	0.3mg/L	5
	LC50	96h	Fish	10.1-11.34mg/l	4
	EC50	48h	Crustacea	2mg/L	5
sodium disilicate	LC50	96h	Fish	>500mg/l	2
	EC50	48h	Crustacea	491mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	18mg/l	2
protease	NOEC(ECx)	504h	Crustacea	0.0008mg/l	2
	EC50	72h	Algae or other aquatic plants	0.29mg/l	2
	EC50	48h	Crustacea	0.09mg/l	2
	LC50	96h	Fish	8.2mg/l	2
cellulase	NOEC(ECx)	96h	Fish	50.1mg/l	2
	EC50	72h	Algae or other aquatic plants	>110.1mg/l	2
	EC50	48h	Crustacea	>110.1mg/l	2
	LC50	96h	Fish	>110.1mg/l	2
amylase	Not Available	Not Available	Not Available	Not Available	Not Available

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

Toxic to aquatic organisms.

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

Continued...

Radiant Brightens Whites or Colours Laundry Powder

of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

Surfactants are in general toxic to aquatic organisms due to their surface-active properties. Historically, synthetic surfactants were often composed of branched alkyl chains resulting in poor biodegradability which led to concerns about their environmental effects. Today however, many of them, for example those used in large amounts, globally, as detergents, are linear and therefore readily biodegradable and considered to be of rather low risk to the environment. A linear structure of the hydrophobic chain facilitates the approach of microorganism while branching, in particular at the terminal position, inhibits biodegradation.

for alkaryl sulfonate petroleum additives:

These are all supplied as dark coloured viscous liquids at ambient temperature.

Environmental fate:

Based on their physicochemical properties and molecular structures, it was concluded that these chemicals were most likely to adsorb strongly to soil and sediments. Compounds in this group were highly hydrophobic such that hydrolysis testing is not technically feasible and the lack of hydrolysable moieties made hydrolysis modeling unnecessary. Two of the alkaryl sulfonates and one homologue were subjected to biodegradability testing and found to be poorly biodegradable. Computer modeled data indicated that the alkaryl sulfonates do not readily photodegrade.

Ecotoxicity:

Existing data on acute fish toxicity, acute invertebrate toxicity, and alga toxicity indicates a low order of toxicity to fish, aquatic invertebrates and alga when the appropriate test methods were used.

for sodium sulfate:

Environmental Fate: In water sodium sulfate completely dissociates into sodium and sulfate ions, which cannot hydrolyse. In anaerobic environments sulfate is biologically reduced to (hydrogen) sulfide by sulfate reducing bacteria, or incorporated into living organisms as a source of sulfur, and thereby included in the sulfur cycle. Sodium sulfate will completely dissolve, ionise and distribute across the entire planetary "aquasphere". Some sulfates may eventually be deposited, the majority of sulfates participate in the sulfur cycle in which natural and industrial sodium sulfate are not distinguishable.

For sodium carbonate

Environmental Fate:

As sodium carbonate has the capacity to drastically increase the pH of an ecosystem, the extent of its effect on organisms depends on the buffer capacity of the aquatic or terrestrial ecosystem, and the pH tolerance levels of the organisms living there. While the use of sodium carbonate could potentially result in its release into aquatic systems and cause an increase in pH, these levels are usually monitored in effluents, and can easily be corrected. If corrective measures are taken to control the pH of waste water no significant increase in the receiving water or adverse environmental effects is not expected with the use of sodium carbonate. The sodium ion will remain in solution and not adsorb to particulate matter.

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.

For Surfactants: Kow cannot be easily determined due to hydrophilic/hydrophobic properties of the molecules in surfactants. BCF value: 1-350.

Aquatic Fate: Surfactants tend to accumulate at the interface of the air with water and are not extracted into one or the other liquid phases.

Terrestrial Fate: Anionic surfactants are not appreciably sorbed by inorganic solids.

Proteins are generally easily biodegradable.

For Linear Alkylbenzene Sulfonic Acids and their Salts (LABS): Log Kow: ~2.

Environmental Fate: The environmental fate of LABS and alkylbenzene sulfonate, (LAS), are expected to be similar. LABS are liquids and LAS is a solid at room temperature. Most of these chemicals will partition to the soil and water very little move to the air or sediment.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
sodium carbonate	LOW	LOW
sodium sulfate	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
sodium carbonate	LOW (LogKOW = -0.4605)
sodium sulfate	LOW (LogKOW = -2.2002)

Mobility in soil

Ingredient	Mobility
sodium carbonate	HIGH (KOC = 1)
sodium sulfate	LOW (KOC = 6.124)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible. <p>Otherwise:</p> <ul style="list-style-type: none"> ▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product. <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> ▶ Reduction ▶ Reuse ▶ Recycling ▶ Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority.
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SECTION 14 Transport information

Radiant Brightens Whites or Colours Laundry Powder

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

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

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

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

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

Not Applicable

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

Product name	Group
sodium carbonate	Not Available
sodium sulfate	Not Available
(linear)alkylbenzenesulfonic acid, sodium salts	Not Available
sodium disilicate	Not Available
protease	Not Available
cellulase	Not Available
amylase	Not Available

Transport in bulk in accordance with the IGC Code

Product name	Ship Type
sodium carbonate	Not Available
sodium sulfate	Not Available
(linear)alkylbenzenesulfonic acid, sodium salts	Not Available
sodium disilicate	Not Available
protease	Not Available
cellulase	Not Available
amylase	Not Available

SECTION 15 Regulatory information

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

sodium carbonate is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

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

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6

Australian Inventory of Industrial Chemicals (AIC)

sodium sulfate is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIC)

(linear)alkylbenzenesulfonic acid, sodium salts is found on the following regulatory lists

Not Applicable

sodium disilicate is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIC)

protease is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIC)

cellulase is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIC)

amylase is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australian Inventory of Industrial Chemicals (AIC)

National Inventory Status

National Inventory	Status
Australia - AIC / Australia Non-Industrial Use	No ((linear)alkylbenzenesulfonic acid, sodium salts)
Canada - DSL	No ((linear)alkylbenzenesulfonic acid, sodium salts)
Canada - NDSL	No (sodium carbonate; sodium sulfate; (linear)alkylbenzenesulfonic acid, sodium salts; sodium disilicate; protease; cellulase; amylase)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	No ((linear)alkylbenzenesulfonic acid, sodium salts)
Japan - ENCS	No ((linear)alkylbenzenesulfonic acid, sodium salts; protease; cellulase; amylase)

Radiant Brightens Whites or Colours Laundry Powder

National Inventory	Status
Korea - KECI	No ((linear)alkylbenzenesulfonic acid, sodium salts)
New Zealand - NZIoC	No ((linear)alkylbenzenesulfonic acid, sodium salts)
Philippines - PICCS	No ((linear)alkylbenzenesulfonic acid, sodium salts)
USA - TSCA	No ((linear)alkylbenzenesulfonic acid, sodium salts)
Taiwan - TCSI	No ((linear)alkylbenzenesulfonic acid, sodium salts)
Mexico - INSQ	No (protease; cellulase)
Vietnam - NCI	No ((linear)alkylbenzenesulfonic acid, sodium salts)
Russia - FBEPH	No ((linear)alkylbenzenesulfonic acid, sodium salts; amylase)
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date	20/08/2021
Initial Date	13/12/2013

SDS Version Summary

Version	Date of Update	Sections Updated
5.1	15/03/2021	Hazards identification - Classification, Identification of the substance / mixture and of the company / undertaking - Synonyms, Name
6.1	20/08/2021	Classification change due to full database hazard calculation/update.

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

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

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