

## Liquid Laundry

### Nowchem

Version No: 1.9  
Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 3

Issue Date: 10/02/2016  
Print Date: 10/02/2016  
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L.GHS.AUS.EN

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

### Product Identifier

<b>Product name</b>	Liquid Laundry
<b>Synonyms</b>	Not Available
<b>Other means of identification</b>	Not Available

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

<b>Relevant identified uses</b>	Ideal for both front and top loader machines for everyday cleaning of fabrics
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### Details of the supplier of the safety data sheet

<b>Registered company name</b>	Nowchem
<b>Address</b>	112A Albatross Road NSW Australia
<b>Telephone</b>	(02) 4421 4099
<b>Fax</b>	(02) 4421 4932
<b>Website</b>	www.nowchem.com.au
<b>Email</b>	sales@nowchem.com.au

### Emergency telephone number

<b>Association / Organisation</b>	Nowchem
<b>Emergency telephone numbers</b>	(02) 4421 4099
<b>Other emergency telephone numbers</b>	0413 809 255

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

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

#### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	1	
Toxicity	0	
Body Contact	3	
Reactivity	1	
Chronic	0	

0 = Minimum  
1 = Low  
2 = Moderate  
3 = High  
4 = Extreme

<b>Poisons Schedule</b>	Not Applicable
<b>Classification <sup>[1]</sup></b>	Skin Corrosion/Irritation Category 2, Serious Eye Damage Category 1, Specific target organ toxicity - single exposure Category 3(respiratory tract irritation)
<b>Legend:</b>	1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

### Label elements

## Liquid Laundry

GHS label elements



SIGNAL WORD

DANGER

## Hazard statement(s)

H315	Causes skin irritation
H318	Causes serious eye damage
H335	May cause respiratory irritation

## Precautionary statement(s) Prevention

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.

## Precautionary statement(s) Response

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 or doctor/physician.
P362	Take off contaminated clothing and wash before reuse.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P332+P313	If skin irritation occurs: Get medical advice/attention.

## 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 in accordance with local regulations.
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## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

CAS No	%[weight]	Name
68439-50-9	<10	<u>alcohols C12-14 ethoxylated</u>
8046-53-5	<10	<u>(linear)alkylbenzenesulfonic acid, sodium salts</u>
8051-30-7	<10	<u>diethanolamine cocoate</u>
9004-82-4	<10	<u>sodium lauryl ether sulfate</u>
2634-33-5	<1	<u>1,2-benzisothiazoline-3-one</u>

## SECTION 4 FIRST AID MEASURES

## Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
Skin Contact	<p>If skin irritation occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>

Continued...

## Liquid Laundry

<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ 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.</li> <li>▶ Transport to hospital, or doctor, without delay.</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.

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

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

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	▶ 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

<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 full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ Avoid spraying water onto liquid pools.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Non - Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ May emit toxic fumes of carbon monoxide (CO).</li> <li>▶ May emit acrid smoke.</li> </ul>

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

<b>Minor Spills</b>	<p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<p>Environmental hazard - contain spillage. Moderate hazard.</p> <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>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Increase ventilation.</li> <li>▶ Stop leak if safe to do so.</li> <li>▶ Contain spill with sand, earth or vermiculite.</li> <li>▶ Collect recoverable product into labelled containers for recycling.</li> <li>▶ Absorb remaining product with sand, earth or vermiculite.</li> <li>▶ Collect solid residues and seal in labelled drums for disposal.</li> <li>▶ Wash area and prevent runoff into drains.</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>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ Avoid smoking, naked lights or ignition sources.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ When handling, <b>DO NOT eat, drink or smoke.</b></li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> </ul>
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Continued...

## Liquid Laundry

	<ul style="list-style-type: none"> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.</li> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></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>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> <li>▶ Protect containers against physical damage and check regularly for leaks.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Packaging as recommended by manufacturer (HDPE).</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Avoid reaction with oxidising agents</li> </ul>

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Not Available

#### EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Liquid Laundry	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
alcohols C12-14 ethoxylated	Not Available	Not Available
(linear)alkylbenzenesulfonic acid, sodium salts	Not Available	Not Available
diethanolamine cocoate	Not Available	Not Available
sodium lauryl ether sulfate	Not Available	Not Available
1,2-benzisothiazoline-3-one	Not Available	Not Available



#### MATERIAL DATA

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

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

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

### Exposure controls

<b>Appropriate engineering controls</b>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard 'physically' away from the worker and ventilation that strategically 'adds' and 'removes' air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas.</p>
<b>Personal protection</b>	 
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</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</li> </ul>

## Liquid Laundry

	<ul style="list-style-type: none"> <li>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>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>Wear chemical protective gloves, e.g. PVC.</li> </ul> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>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.</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>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>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>Barrier cream.</li> <li>Skin cleansing cream.</li> <li>Eye wash unit.</li> </ul>
<b>Thermal hazards</b>	Not Available

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

## Information on basic physical and chemical properties

<b>Appearance</b>	Clear Blue Liquid		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	1.05 - 1.07
<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>	11.0 - 11.4	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Non Flammable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water (g/L)</b>	Miscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

## SECTION 10 STABILITY AND REACTIVITY

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

## SECTION 11 TOXICOLOGICAL INFORMATION

## Information on toxicological effects

<b>Inhaled</b>	Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.
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## Liquid Laundry

	<p>The material has <b>NOT</b> been classified by EC Directives or other classification systems as 'harmful by inhalation'. This is because of the lack of corroborating animal or human evidence. In the absence of such evidence, care should be taken nevertheless to ensure exposure is kept to a minimum and that suitable control measures be used, in an occupational setting to control vapours, fumes and aerosols.</p>
<b>Ingestion</b>	<p>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. 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. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.</p> <p>Ingestion of anionic surfactants/ hydrotropes may produce diarrhoea, intestinal distension and occasional vomiting. Lethal doses in animals range from 1 to 5 gm/kg.</p>
<b>Skin Contact</b>	<p>Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.</p> <p>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>Anionic surfactants/ hydrotropes generally produce skin reactions following the removal of natural oils. The skin may appear red and may become sore. Papular dermatitis may also develop. Sensitive individuals may exhibit cracking, scaling and blistering.</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, puncture wounds 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>
<b>Eye</b>	<p>When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.</p> <p>Direct eye contact with some concentrated anionic surfactants/ hydrotropes produces corneal damage, in some cases severe. Low concentrations may produce immediate discomfort, conjunctival hyperaemia, and oedema of the corneal epithelium. Healing may take several days. Temporary clouding of the cornea may occur.</p>
<b>Chronic</b>	<p>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.</p> <p>Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Limited evidence shows that inhalation of the material is capable of inducing a sensitisation reaction in a significant number of individuals at a greater frequency than would be expected from the response of a normal population.</p> <p>Pulmonary sensitisation, resulting in hyperactive airway dysfunction and pulmonary allergy may be accompanied by fatigue, malaise and aching. Significant symptoms of exposure may persist for extended periods, even after exposure ceases. Symptoms can be activated by a variety of nonspecific environmental stimuli such as automobile exhaust, perfumes and passive smoking.</p> <p>There exists limited evidence that shows that skin contact with the material is capable either of inducing a sensitisation reaction in a significant number of individuals, and/or of producing positive response in experimental animals.</p> <p>Absorbed sulfonates are quickly distributed through living systems and are readily excreted. Toxic effects may result from the effects of binding to proteins and the ability of sulfonates to translocate potassium and nitrate (NO<sub>3</sub><sup>-</sup>) ions from cellular to interstitial fluids. Airborne sulfonates may be responsible for respiratory allergies and, in some instances, minor dermal allergies.</p>

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**Legend:**

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. \* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

<b>Liquid Laundry</b>	<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 hyperreactivity</p>
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## Liquid Laundry

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. 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.

No significant acute toxicological data identified in literature search.

Linear alkylbenzene sulfonates (LAS) are classified as Irritant (Xi) with the risk/hazard phrases R38/H315 (Irritating to skin) and R41/H318 (Risk of serious damage to eyes) according to CESIO (CESIO 2000). LAS are not included in Annex 1/6 of list of dangerous substances of Council Directive 67/548/EEC and 1272/2008 respectively.

Linear alkylbenzene sulfonic acids (LABS) are strong acids (pKa<2) are classified as corrosive (R34/H314)

**Acute toxicity:** The available data indicate minimal to moderate toxicity, with LD50 values ranging from 500 to 2000 mg/kg body weight (bw). Acute inhalation data also indicate a lack of significant toxicity. Available dermal exposure data also shows a lack of significant toxicity.

LAS are readily absorbed by the gastrointestinal tract after oral administration in animals. LAS are not readily absorbed through the skin. The bulk is metabolised in the liver to sulfophenyl carboxylic acids. The metabolites are excreted primarily via the urine and faeces. The main urinary metabolites in rats are sulfophenyl butanoic acid and sulfophenyl pentanoic acid. Accumulation of LAS or its main metabolites has not been established in any organ after repeated oral ingestion.

No serious injuries or fatalities in man have been reported following accidental ingestion of LAS-containing detergent. The main clinical signs observed after oral administration to rats of doses near or greater than the LD50 values consisted of reduced voluntary activity, diarrhoea, weakness etc. Death usually occurred within 24 hours of administration. Rats appear to be more sensitive to LAS than mice.

LAS and branched alkylbenzene sulfonates may cause irritation of the eyes, skin and mucous membranes. LAS are relatively more irritating to the skin than the corresponding branched alkylbenzene sulfonates. The potential of LAS to irritate the skin depends on the concentration applied. LAS have been classified as irritating to skin at concentrations above 20% according to EU-criteria. Human skin can tolerate contact with solution of up to 1% LAS for 24 hours resulting in only mild irritation. Application of > 5% LAS to the eyes of rabbits produced irritation. Concentration of < 0.1% LAS produced mild to no irritation.

Skin sensitization was not seen in 2,294 volunteers exposed to LAS or in 17,887 exposed to formulations of LAS.

**Repeat dose toxicity:** A feeding study indicated that LAS, when administered for 2 years at extremely high levels (0.5%) in the diets to rats, produced no adverse effects on growth, health or feed efficiency.

**Genotoxicity:** The mutagenic potential of LAS was tested using *Salmonella typhimurium* strains, using Ames test. In these studies, LAS was not mutagenic.

The available long-term studies are inadequate for evaluating the carcinogenic potential of LAS in laboratory animals. The studies available (oral administration to rats and mice) do not show any evidence of carcinogenicity.

**Reproductive toxicity:** In general no specific effect of LAS on reproductive processes has been seen, although dosages causing maternal toxicity may also induce some effects on reproduction. No teratogenic effects attributed to LAS exposure have been observed.

Environmental and Health Assessment of Substances in Household Detergents and Cosmetic Detergent Products, Environment Project, 615, 2001. Torben Madsen et al: Miljøministeriet (Danish Environmental Protection Agency)

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 fill the criteria for classification  
 ✓ – Data required to make classification available  
 ☐ – Data Not Available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

## Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
alcohols C12-14 ethoxylated	LC50	96	Fish	0.876mg/L	2
alcohols C12-14 ethoxylated	EC50	48	Crustacea	0.39mg/L	2
alcohols C12-14 ethoxylated	EC50	72	Algae or other aquatic plants	0.13mg/L	2
alcohols C12-14 ethoxylated	EC50	72	Algae or other aquatic plants	0.1341mg/L	2
alcohols C12-14 ethoxylated	NOEC	72	Algae or other aquatic plants	0.0365mg/L	2
(linear)alkylbenzenesulfonic acid, sodium salts	EC50	120	Algae or other aquatic plants	10mg/L	4
(linear)alkylbenzenesulfonic acid, sodium salts	LC50	96	Fish	5mg/L	4
diethanolamine cocoate	EC50	48	Crustacea	=2.39mg/L	1
diethanolamine cocoate	NOEC	504	Crustacea	=1mg/L	1
diethanolamine cocoate	EC0	96	Algae or other aquatic plants	=1mg/L	1
diethanolamine cocoate	EC50	96	Algae or other aquatic plants	=2.3mg/L	1
diethanolamine cocoate	LC50	96	Fish	=2.8mg/L	1
sodium lauryl ether sulfate	NOEC	48	Fish	0.26mg/L	5
1,2-benzisothiazoline-3-one	EC50	48	Crustacea	0.062mg/L	4
1,2-benzisothiazoline-3-one	EC50	48	Crustacea	4.4mg/L	4
1,2-benzisothiazoline-3-one	LC50	96	Fish	1.6mg/L	4

**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 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 of equipment wash-waters.

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

for alkaryl sulfonate petroleum additives:

Continued...



## Liquid Laundry

These are all dark colored 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. Fish toxicity: Overall, the LC50 for these substances was greater than 100 mg/L indicating a relatively low order of acute toxicity to fish.

Invertebrate toxicity (daphnid): Overall, the EC50 for these substances was greater than 100 mg/L indicating a relatively low order of acute toxicity to daphnids.

Algae toxicity: Overall, the EC50 for these substances was greater than 100 mg/L indicating a relatively low order of toxicity to algae.

For surfactants:

### Environmental fate:

Octanol/water partition coefficients cannot easily be determined for surfactants because one part of the molecule is hydrophilic and the other part is hydrophobic. Consequently they tend to accumulate at the interface and are not extracted into one or other of the liquid phases. As a result surfactants are expected to transfer slowly, for example, from water into the flesh of fish. During this process, readily biodegradable surfactants are expected to be metabolised rapidly during the process of bioaccumulation. This was emphasised by the OECD Expert Group stating that chemicals are not to be considered to show bioaccumulation potential if they are readily biodegradable.

Several anionic and nonionic surfactants have been investigated to evaluate their potential to bioconcentrate in fish. BCF values (BCF - bioconcentration factor) ranging from 1 to 350 were found. These are absolute maximum values, resulting from the radiolabelling technique used. In all these studies, substantial oxidative metabolism was found resulting in the highest radioactivity in the gall bladder. This indicates liver transformation of the parent compound and biliary excretion of the metabolised compounds, so that 'real' bioconcentration is overstated. After correction it can be expected that 'real' parent BCF values are one order of magnitude less than those indicated above, i.e. 'real' BCF is <100. Therefore the usual data used for classification by EU directives to determine whether a substance is 'Dangerous to the Environment' has little bearing on whether the use of the surfactant is environmentally acceptable.

### Ecotoxicity:

Surfactant should be considered to be toxic (EC50 and LC50 values of < 10 mg/L) to aquatic species under conditions that allow contact of the chemicals with the organisms. The water solubility of the chemicals does not impact the toxicity except as it relates to the ability to conduct tests appropriately to obtain exposure of the test species. The acute aquatic toxicity generally is considered to be related to the effects of the surfactant properties on the organism and not to direct chemical toxicity.

For linear alkylbenzene sulfonic acids (LABS) (and their salts):

### Environmental fate:

LABS are highly water soluble (miscible) and have a relatively low K<sub>ow</sub>. The environmental fate data indicate that these chemicals are highly susceptible to photo- and biodegradation.

LABS are strong acids (pK<sub>a</sub> < 1) that are completely ionised in aqueous solutions. The chemical species present in aqueous solutions at neutral (physiological) pH is the linear alkylbenzene sulfonate (the LASion) (C<sub>10</sub>-14 linear alkyl benzene-SO<sub>3</sub><sup>-</sup>), the identical species present in solutions of LAS, where the counter ion (typically sodium, calcium or ammonium) will disassociate to form the LAS anion. Thus, the physical-chemical, environmental fate, ecotoxicity and toxicity properties of the LABS and LAS would be expected to be similar. It should be noted that the LABS are liquids and LAS is a solid at room temperature. However, in water the difference between the LAB sulfonic acids and LAS disappears as dissociation results in the same ion in solution. Therefore, parameters such as K<sub>ow</sub>, water solubility and pH/pK<sub>a</sub> are appropriate to compare. The octanol-water partition coefficients are around 2 (log K<sub>ow</sub>) for all of the chemicals in this category. LABS are not expected to volatilise significantly. Fugacity modeling predicts that most of these chemicals will partition to the soil and water. Very little partitions to the air or sediment. Photodegradation is estimated (using EPI Suite software) to be a significant mechanism for breakdown. Based on the model estimates, the hydroxyl radical reaction half-lives ranged from about 7 to 8.6 hours. Estimated data for LAS were similar. Furthermore, measured data for LAS suggest even more rapid photodegradation, with 95% of the material degraded within 20 minutes at 20°C in a laboratory study.

Experimental data indicate that LAS is stable in water.

LABS are generally biodegradable. Measured biodegradation data indicate substantial microbial degradation under aerobic conditions. For dodecylbenzenesulfonic acid 69% of the material mineralised after 28 days. Biodegradation of the C<sub>10</sub>-16 derivatives and the LAS are also rapid, with 93% or greater of the material degrading within 28 or 37 days. In addition, studies show that straight chain alkylbenzene sulfonate materials readily degrade, with the shorter chain length compounds degrading more rapidly. Thus, the data indicate that these chemicals are highly susceptible to degradation, both by photolytic and microbial mechanisms.

The initial step in the biodegradation of LABS under aerobic conditions is an omega-oxidation of the terminal methyl group of the alkyl chain to form a carboxylic acid. Further degradation proceeds by a stepwise shortening of the alkyl chain by beta-oxidation leaving a short-chain sulfophenyl carboxylic acid. In the presence of molecular oxygen the aromatic ring structure hydrolyses to form a dihydroxy-benzene structure which is opened before desulfonation of the formed sulfonated dicarboxylic acid. The final degradation steps have not been investigated in detail but are likely to occur by general bacterial metabolic routes involving a total mineralisation and assimilation into biomass. Both the initial omega-oxidation and the hydroxylation of the ring structure of LAS require molecular oxygen, and they are not expected to take place under anoxic conditions.

The Bioconcentration Factor (BCF) tends to increase with increasing alkyl chain length but also the position of the aryl sulfonate moiety was important. A higher BCF was seen for linear alkylbenzenesulfonate isomers with the aryl sulfonate attached. Available data indicate that LABS have low to moderate bioaccumulation potential, with a bioconcentration factor for dodecylbenzenesulfonic acid of 130. LAS has bioconcentration factors that range from 22 to 87.

### Ecotoxicity:

Numerous studies have been performed to determine the effects of LABS towards aquatic organisms. The aquatic effect concentrations that were observed in these studies are highly variable. This variation is partly related to the testing of different isomers and homologues, but it may also be due to the specific test conditions and species. The length of the alkyl chain is an important factor determining the aquatic toxicity. In general, the homologues with the highest number of carbons in the alkyl chain are more toxic than are those with shorter alkyl chains. Today, commercial LABS have a homologous distribution between C<sub>10</sub> and C<sub>13</sub> with a typical average alkyl chain length of C<sub>11.6</sub>.

The widest range in the toxicity of LABS towards species belonging to the same group is found for algae. Approximately 90% of the data found in the literature fall between 0.1 and 100 mg/l. Typical ranges of EC<sub>50</sub> values are 1 to 100 mg/l for fresh water species and < 1 to 10 mg/l for marine species. Typical values lie between 29 and 170 mg/l.

A very low EC<sub>100</sub> value of 0.025 mg/l was determined for *Gymnodium breve*. Previous studies in which *Gymnodium breve* was exposed with AES confirm that this species is highly sensitive to surfactants, and occasionally available data for *Gymnodium breve* should therefore not be used for comparison of the aquatic toxicity between various surfactants.

LC<sub>50</sub> values have been found in the range of 1 to 10 mg/l when *Daphnia magna* were exposed with LABS homologues between C<sub>10</sub> and C<sub>13</sub>. The acute toxicity of LABS to *Daphnia magna* generally increases with increasing alkyl chain length. Typical values lie between 3 and 12 mg/l.

A study with the marine crustacean *Acartia tonsa* indicated that a C<sub>10</sub>-13 LAS affected the survival at 0.54 mg/l (LC<sub>50</sub>) and the development rate at 0.51 mg/l (EC<sub>50</sub>) after 8 days of exposure. The 48 h-LC<sub>50</sub> that was obtained in the same study with *Acartia tonsa* was 2.1 mg/l.

Metabolites from biotransformation of LABS are reported to have a much lower toxicity to invertebrates compared to the toxicity of the intact surfactant.

The toxicity of LABS to fish generally increases with increasing alkyl chain length, and approximately a 10-fold difference in toxicity between homologues separated by two carbon atoms has been observed. As also noted for invertebrates, fish are less susceptible to metabolites from biotransformation of LABS. LC<sub>50</sub> values below 1 mg/l were found for C<sub>11.9</sub> (0.71 mg/l), C<sub>13</sub> and C<sub>14</sub> (both 0.4 mg/l) in studies with fathead minnow.

LABS sorb to sediment with partition coefficients of 50 to 1,000. The toxicity of LABS bound to sediment is relatively low compared to LABS in solution. NOEC and LOEC values were as high as 319 and 993 mg LABS/kg, respectively, for the sediment-living *Chironomus riparius*. The corresponding NOEC for LABS in solution was as low as 2.4 mg/l indicating that only a small fraction of the sorbed LABS was bioavailable. LABS dissolved in water may also cause chronic effects like reduction of the growth rate of the marine mussel *Mytilus galloprovincialis*. LABS sorbed to sediments did not have similar effects.

Environmental and Health Assessment of Substances in Household Detergents and Cosmetic Detergent Products, Environment Project, 615, 2001. Torben Madsen et al: Miljøministeriet (Danish Environmental Protection Agency) Assessment Plan for the Linear Alkylbenzene (LAB) Sulfonic Acids Category in Accordance with the USEPA High Production Volume Chemical Challenge Program: The LAB Sulfonic Acids Coalition

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

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

### Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients



## Liquid Laundry

## Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

## 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. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</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 Authority for disposal.</li> <li>▶ Bury or incinerate residue at an approved site.</li> <li>▶ Recycle containers if possible, or dispose of in an authorised landfill.</li> </ul>
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## 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

## SECTION 15 REGULATORY INFORMATION

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

## ALCOHOLS C12-14 ETHOXYLATED(68439-50-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

## (LINEAR)ALKYLBENZENESULFONIC ACID, SODIUM SALTS(8046-53-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Not Applicable

## DIETHANOLAMINE COCOATE(8051-30-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

## SODIUM LAURYL ETHER SULFATE(9004-82-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

## 1,2-BENZISOTHIAZOLINE-3-ONE(2634-33-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

National Inventory	Status
Australia - AICS	N ((linear)alkylbenzenesulfonic acid, sodium salts)
Canada - DSL	N ((linear)alkylbenzenesulfonic acid, sodium salts)
Canada - NDSL	N (diethanolamine cocoate; 1,2-benzisothiazoline-3-one; alcohols C12-14 ethoxylated; (linear)alkylbenzenesulfonic acid, sodium salts)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	N ((linear)alkylbenzenesulfonic acid, sodium salts)
Japan - ENCS	N (diethanolamine cocoate; (linear)alkylbenzenesulfonic acid, sodium salts)
Korea - KECI	N ((linear)alkylbenzenesulfonic acid, sodium salts)
New Zealand - NZIoC	N ((linear)alkylbenzenesulfonic acid, sodium salts)
Philippines - PICCS	N ((linear)alkylbenzenesulfonic acid, sodium salts)
USA - TSCA	N ((linear)alkylbenzenesulfonic acid, sodium salts)
<b>Legend:</b>	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)

## Liquid Laundry

## SECTION 16 OTHER INFORMATION

## Other information

## Ingredients with multiple cas numbers

Name	CAS No
alcohols C12-14 ethoxylated	103819-01-8, 68439-50-9
sodium lauryl ether sulfate	11121-04-3, 113096-26-7, 115284-60-1, 116958-77-1, 12627-22-4, 12627-23-5, 1335-72-4, 1335-73-5, 3088-31-1, 32057-62-8, 37325-23-8, 39390-84-6, 39450-08-3, 42504-27-8, 51059-21-3, 51286-51-2, 53663-56-2, 56572-89-5, 57762-43-3, 57762-59-1, 66747-17-9, 68585-34-2, 68891-38-3, 73651-68-0, 74349-47-6, 76724-02-2, 9004-82-4, 91648-56-5, 95508-27-3, 98112-64-2

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.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net](http://www.chemwatch.net)

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

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