

## SOLBERG VERSAGARD AS-100

### SECTION 1: IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

- 1.1 Product identifier:** SOLBERG VERSAGARD AS-100
- 1.2 Recommended use of the chemical and restrictions on use:**  
Relevant uses: Fire-extinguishing. For professional user only.  
Uses advised against: All uses not specified in this section or in section 7.3
- 1.3 Details of manufacturer or importer:**  
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### SECTION 2: HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture:**  
**WHS:**  
Classification of this product has been carried out in accordance with Model Work Health and Safety Regulations  
Eye Dam. 1: Serious eye damage, Category 1, H318  
Skin Irrit. 2: Skin irritation, Category 2, H315
- 2.2 Label elements, including precautionary statements:**  
**WHS:**  
**Danger**
- 
- Hazard statements:**  
Eye Dam. 1: H318 - Causes serious eye damage.  
Skin Irrit. 2: H315 - Causes skin irritation.
- Precautionary statements:**  
P264: Wash thoroughly after use  
P280: Wear protective gloves/protective clothing/eye protection/face protection  
P302+P352: IF ON SKIN: Wash with plenty of soap and water  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P332+P313: If skin irritation occurs: Get medical advice/attention
- Substances that contribute to the classification**  
(carboxymethyl)dimethyl-3-[(1-oxododecyl)amino]propylammonium hydroxide (<10 %); Sodium octyl sulphate (<10 %)
- 2.3 Other hazards which do not result in classification:**  
Non-applicable

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Safety data sheet  
According to WHS Regulations

**SOLBERG VERSAGARD AS-100**

**SECTION 3: COMPOSITION AND INFORMATION ON INGREDIENTS, IN ACCORDANCE WITH SCHEDULE 8**

**3.1 Substances:**

Non-applicable

**3.2 Mixtures:**

**Chemical description:** Aqueous solution of tensoactives

**Components:**

In accordance with Schedule 8 (WHS Regulations), the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 111-76-2	<b>2-butoxyethanol</b> Acute Tox. 4: H302+H312+H332; Eye Irrit. 2: H319; Flam. Liq. 4: H227; Skin Irrit. 2: H315 - Warning	<10 %
CAS: 4292-10-8	<b>(carboxymethyl)dimethyl-3-[(1-oxododecyl)amino]propylammonium hydroxide</b> Eye Dam. 1: H318 - Danger	<10 %
CAS: 142-31-4	<b>Sodium octyl sulphate</b> Eye Dam. 1: H318; Skin Irrit. 2: H315 - Danger	<10 %

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

**SECTION 4: FIRST AID MEASURES**

**4.1 Description of necessary first aid measures:**

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

**By inhalation:**

This product is not classified as hazardous through inhalation, however, it is recommended in case of intoxication symptoms to remove the person affected from the area of exposure, provide clean air and keep at rest. Request medical attention if symptoms persist.

**By skin contact:**

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

**By eye contact:**

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, as this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

**By ingestion/aspiration:**

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

**4.2 Symptoms caused by exposure:**

Acute and delayed effects are indicated in sections 2 and 11.

**4.3 Medical attention and special treatment:**

Non-applicable

**SECTION 5: FIREFIGHTING MEASURES**

**5.1 Suitable extinguishing equipment:**

Product is non-flammable under normal conditions of storage, manipulation and use, but the product contains flammable substances. In the case of inflammation as a result of improper manipulation, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems. IT IS NOT RECOMMENDED to use full jet water as an extinguishing agent.

**5.2 Specific hazards arising from the chemical:**

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

**5.3 Special protective equipment and precautions for fire fighters:**

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**SOLBERG VERSAGARD AS-100****SECTION 5: FIREFIGHTING MEASURES (continued)**

Depending on the magnitude of the fire it may be necessary to use full protective clothing and individual respiratory equipment. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

**Additional provisions:**

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Destroy any source of ignition. In case of fire, refrigerate the storage containers and tanks for products susceptible to inflammation, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures:**

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilled product (See section 8). Evacuate the area and keep out those who do not have protection.

**6.2 Environmental precautions:**

This product is not classified as hazardous to the environment. Keep product away from drains, surface and underground water.

**6.3 Methods and materials for containment and cleaning up:**

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

**6.4 Reference to other sections:**

See sections 8 and 13.

**SECTION 7: HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED****7.1 Precautions for safe handling:**

A.- Precautions for safe manipulation

Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, manipulation and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations to prevent ergonomic and toxicological risks

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

**7.2 Conditions for safe storage, including any incompatibilities:**

A.- Technical measures for storage

Minimum Temp.: 0 °C

Maximum Temp.: 50 °C

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

**7.3 Specific end use(s):**

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

**SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION****8.1 Exposure control measures:**

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**SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION (continued)**

Substances whose occupational exposure limits have to be monitored in the workplace (Workplace Exposure Standards for Airborne Contaminants):

Identification	Occupational exposure limits		
	2-butoxyethanol CAS: 111-76-2	TWA	20 ppm
	STEL	50 ppm	242 mg/m <sup>3</sup>

**8.2 Engineering controls:**

A.- Individual protection measures, for example personal protective equipment (PPE)

If product is used at the concentration dosing conditions specified in the relevant instructions for use (section 15), personal protective equipment described in section 8.2 for UNDILUTED products will not be required.

Safe handling recommendations for undiluted product:

As a preventative measure it is recommended to use basic Personal Protection Equipment. For more information on Personal Protection Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1.

All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection

The use of protection equipment will be necessary if a mist forms or if the occupational exposure limits are exceeded.

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	Protective gloves against minor risks	Replace gloves in case of any sign of damage. For prolonged periods of exposure to the product for professional users/industrials, we recommend using chemical protection gloves

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application

D.- Ocular and facial protection

Pictogram	PPE	Remarks
 Mandatory face protection	Panoramic glasses against splash/projections.	Clean daily and disinfect periodically according to the manufacturer's instructions. Use if there is a risk of splashing.

E.- Bodily protection

Pictogram	PPE	Remarks
	Work clothing	Replace before any evidence of deterioration.
	Anti-slip work shoes	Replace before any evidence of deterioration.

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

**Environmental exposure controls:**

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

**SOLBERG VERSAGARD AS-100**
**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**
**9.1 Information on basic physical and chemical properties:**

For complete information see the product datasheet.

**Appearance:**

Physical state at 20 °C:	Liquid
Appearance:	Viscous
Color:	White
Odor:	Characteristic
Odour threshold:	Non-applicable *

**Volatility:**

Boiling point at atmospheric pressure:	Non-applicable *
Vapour pressure at 20 °C:	Non-applicable *
Vapour pressure at 50 °C:	Non-applicable *
Evaporation rate at 20 °C:	Non-applicable *

**Product description:**

Density at 20 °C:	1000 - 1040 kg/m <sup>3</sup>
Relative density at 20 °C:	Non-applicable *
Dynamic viscosity at 20 °C:	105 cP
Kinematic viscosity at 20 °C:	Non-applicable *
Kinematic viscosity at 40 °C:	>20.5 cSt
Concentration:	Non-applicable *
pH:	7 - 8
Vapour density at 20 °C:	Non-applicable *
Partition coefficient n-octanol/water 20 °C:	Non-applicable *
Solubility in water at 20 °C:	Non-applicable *
Solubility properties:	Highly water-soluble
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *
Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *

**Flammability:**

Flash Point:	Non Flammable (>93 °C)
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	Non-applicable *
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *

**Explosive:**

Lower explosive limit:	Non-applicable *
Upper explosive limit:	Non-applicable *

**9.2 Other information:**

Surface tension at 20 °C:	Non-applicable *
Refraction index:	Non-applicable *

\*Not relevant due to the nature of the product, not providing information property of its hazards.

**SECTION 10: STABILITY AND REACTIVITY**
**10.1 Reactivity:**

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**SOLBERG VERSAGARD AS-100**
**SECTION 10: STABILITY AND REACTIVITY (continued)**

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

**10.2 Chemical stability:**

Chemically stable under the conditions of storage, handling and use.

**10.3 Possibility of hazardous reactions:**

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

**10.4 Conditions to avoid:**

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Precaution	Avoid direct impact	Not applicable

**10.5 Incompatible materials:**

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

**10.6 Hazardous decomposition products:**

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO<sub>2</sub>), carbon monoxide and other organic compounds.

**SECTION 11: TOXICOLOGICAL INFORMATION**
**11.1 Information on toxicological effects:**

The experimental information related to the toxicological properties of the product itself is not available

Contains glycols. With possibility of effects that are hazardous to the health, it is recommended not to breathe the vapours for long periods of time.

**Dangerous health implications:**

In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits, it may result in adverse effects on health depending on the means of exposure:

**A- Ingestion (acute effect):**

- Acute toxicity : Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.

**B- Inhalation (acute effect):**

- Acute toxicity : Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

**C- Contact with the skin and the eyes (acute effect):**

- Contact with the skin: Produces skin inflammation.
- Contact with the eyes: Produces serious eye damage after contact.

**D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):**

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned. For more information see section 3.  
IARC: 2-butoxyethanol (3)
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

**E- Sensitizing effects:**

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.
- Cutaneous: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

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**SECTION 11: TOXICOLOGICAL INFORMATION (continued)**

**F- Specific target organ toxicity (STOT) - single exposure:**

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

**G- Specific target organ toxicity (STOT)-repeated exposure:**

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

**H- Aspiration hazard:**

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

**Other information:**

Non-applicable

**Specific toxicology information on the substances:**

Identification	Acute toxicity		Genus
	LD50 oral	LD50 dermal	
2-butoxyethanol CAS: 111-76-2	LD50 oral	1414 mg/kg	Rat
	LD50 dermal	1060 mg/kg	Rabbit
	LC50 inhalation	11 mg/L (4 h)	Rat
(carboxymethyl)dimethyl-3-[(1-oxododecyl)amino]propylammonium hydroxide CAS: 4292-10-8	LD50 oral	5100 mg/kg	Rat
	LD50 dermal	Non-applicable	
	LC50 inhalation	Non-applicable	

**SECTION 12: ECOLOGICAL INFORMATION**

The experimental information related to the eco-toxicological properties of the product itself is not available

**12.1 Ecotoxicity:**

Identification	Acute toxicity		Species	Genus
	LC50	EC50		
2-butoxyethanol CAS: 111-76-2	LC50	1490 mg/L (96 h)	Lepomis macrochirus	Fish
	EC50	1815 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	911 mg/L (72 h)	Pseudokirchneriella subcapitata	Algae
(carboxymethyl)dimethyl-3-[(1-oxododecyl)amino]propylammonium hydroxide CAS: 4292-10-8	LC50	1.9 mg/L (96 h)	Cyprinus carpio	Fish
	EC50	1.9 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	Non-applicable		

**12.2 Persistence and degradability:**

Identification	Degradability		Biodegradability	
	BOD5	COD	Concentration	Period
2-butoxyethanol CAS: 111-76-2	BOD5	0.71 g O2/g	Concentration	100 mg/L
	COD	2.2 g O2/g	Period	14 days
	BOD5/COD	0.32	% Biodegradable	96 %
(carboxymethyl)dimethyl-3-[(1-oxododecyl)amino]propylammonium hydroxide CAS: 4292-10-8	BOD5	Non-applicable	Concentration	100 mg/L
	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	95 %

**12.3 Bioaccumulative potential:**

Identification	Bioaccumulation potential	
	BCF	Pow Log
2-butoxyethanol CAS: 111-76-2	BCF	3
	Pow Log	0.83
	Potential	Low

**12.4 Mobility in soil:**

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**SECTION 12: ECOLOGICAL INFORMATION (continued)**

Identification	Absorption/desorption		Volatility	
2-butoxyethanol CAS: 111-76-2	Koc	8	Henry	1.621E-1 Pa·m <sup>3</sup> /mol
	Conclusion	Very High	Dry soil	No
	Surface tension	2.729E-2 N/m (25 °C)	Moist soil	Yes
(carboxymethyl)dimethyl-3-[(1-oxododecyl)amino]propylammonium hydroxide CAS: 4292-10-8	Koc	3063	Henry	Non-applicable
	Conclusion	Low	Dry soil	Non-applicable
	Surface tension	Non-applicable	Moist soil	Non-applicable

**12.5 Results of PBT and vPvB assessment:**

Non-applicable

**12.6 Other adverse effects:**

Not described

**SECTION 13: DISPOSAL CONSIDERATIONS**

**13.1 Disposal methods:**

**Waste management (disposal and evaluation):**

Consult the authorized waste service manager on the assessment and disposal operations. In case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See epigraph 6.2.

**Regulations related to waste management:**

Legislation related to waste management:

Basel Convention (Hazardous Waste)

Hazardous Waste (Regulation of Exports and Imports) Act 1989 and Amendments

**SECTION 14: TRANSPORT INFORMATION**

This product is not regulated for transport.

**SECTION 15: REGULATORY INFORMATION**

**15.1 Safety, health and environmental regulations:**

**Specific provisions in terms of protecting people or the environment:**

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

**Relevant instructions for use:**

This product is intended for the production of foam for fire extinguishing purposes. For this purpose it should be diluted in water and used with appropriate foam-generating equipment. Use at 3% on both hydrocarbon and polar solvent fires.

**Other legislation:**

Industrial Chemicals (Notification and Assessment) Act 1989

**Other information:**

Considering the information on the raw materials, the product is classified in water hazard class 1 - slightly hazardous to water (WGK 1) according to AwSV.

**SECTION 16: OTHER INFORMATION**

**Legislation related to safety data sheets:**

This safety data sheet has been designed in accordance with WHS regulations and Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals.

**Texts of the legislative phrases mentioned in section 2:**

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**SECTION 16: OTHER INFORMATION (continued)**

H318: Causes serious eye damage

H315: Causes skin irritation

**Texts of the legislative phrases mentioned in section 3:**

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

**WHS:**

Acute Tox. 4: H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled

Eye Dam. 1: H318 - Causes serious eye damage

Eye Irrit. 2: H319 - Causes serious eye irritation

Flam. Liq. 4: H227 - Combustible liquid

Skin Irrit. 2: H315 - Causes skin irritation

**Advice related to training:**

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

**Principal bibliographical sources:**

<http://www.safeworkaustralia.gov.au/>

**Abbreviations and acronyms:**

ADG: Australian Code for the Transport of Dangerous Goods by Road and Rail

IMDG: International maritime dangerous goods code

IATA: International Air Transport Association

ICAO: International Civil Aviation Organisation

COD: Chemical Oxygen Demand

BOD5: 5-day biochemical oxygen demand

BCF: Bioconcentration factor

LD50: Lethal Dose 50

CL50: Lethal Concentration 50

EC50: Effective concentration 50

Log-POW: Octanol-water partition coefficient

Koc: Partition coefficient of organic carbon

The information contained in this safety data sheet is based on sources, technical knowledge and current Australian legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET