Propoxylates of aliphatic alcohols (C ≥6): Human health tier II assessment

12 December 2019

Chemicals in this assessment

Chemical Name in the Inventory	CAS Number
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-octadecyl-.omega.-hydroxy-	25231-21-4
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hexadecyl-.omega.-hydroxy-	9035-85-2
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-9-octadecenyl-.omega.-hydroxy-, (Z)-	52581-71-2
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-tetradecyl-.omega.-hydroxy-	63793-60-2
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, octadecyl ether	67922-55-8
Alcohols, C9-11, propoxylated	68920-69-4
Alcohols, tallow, propoxylated	70955-07-6
Alcohols, C12-15, propoxylated	74499-34-6
Alcohols, C12-14-secondary, propoxylated	126950-62-7

Preface

This assessment was carried out by staff of the National Industrial Chemicals Notification and Assessment Scheme (NICNAS) using the Inventory Multi-tiered Assessment and Prioritisation (IMAP) framework.

The IMAP framework addresses the human health and environmental impacts of previously unassessed industrial chemicals listed on the Australian Inventory of Chemical Substances (the Inventory).

The framework was developed with significant input from stakeholders and provides a more rapid, flexible and transparent approach for the assessment of chemicals listed on the Inventory.

Stage One of the implementation of this framework, which lasted four years from 1 July 2012, examined 3000 chemicals meeting characteristics identified by stakeholders as needing priority assessment. This included chemicals for which NICNAS already held exposure information, chemicals identified as a concern or for which regulatory action had been taken overseas, and chemicals detected in international studies analysing chemicals present in babies' umbilical cord blood.

Stage Two of IMAP began in July 2016. We are continuing to assess chemicals on the Inventory, including chemicals identified as a concern for which action has been taken overseas and chemicals that can be rapidly identified and assessed by using Stage One information. We are also continuing to publish information for chemicals on the Inventory that pose a low risk to human health or the environment or both. This work provides efficiencies and enables us to identify higher risk chemicals requiring assessment.

The IMAP framework is a science and risk-based model designed to align the assessment effort with the human health and environmental impacts of chemicals. It has three tiers of assessment, with the assessment effort increasing with each tier. The Tier I assessment is a high throughput approach using tabulated electronic data. The Tier II assessment is an evaluation of risk on a substance-by-substance or chemical category-by-category basis. Tier III assessments are conducted to address specific concerns that could not be resolved during the Tier II assessment.

These assessments are carried out by staff employed by the Australian Government Department of Health and the Australian Government Department of the Environment and Energy. The human health and environment risk assessments are conducted and published separately, using information available at the time, and may be undertaken at different tiers.

This chemical or group of chemicals are being assessed at Tier II because the Tier I assessment indicated that it needed further investigation.

For more detail on this program please visit:**www.nicnas.gov.au**

Disclaimer

ACRONYMS & ABBREVIATIONS

Grouping Rationale

This assessment for propoxylates of aliphatic alcohols (C =6) or alcohol propoxylates (APs) is conducted in conjunction with the other IMAP Human Health Tier II assessments for mixed alkoxylates and ethoxylates of aliphatic alcohols (C =6) (NICNASa; NICNASb). Three assessments in this series are based on the analogue and chain-length category approach (OECD, 2014), including structure-activity relationship (SAR) analyses of these chemicals and their physiochemical, toxicokinetic and toxicological profiles. The SAR information is mainly derived from available data for alcohol ethoxylates (AEs) where applicable (NICNASb).

Although most APs in this group are polymers according to the definition in the National Industrial Chemicals (Notification and Assessment) Act (1989), the individual members do not necessarily meet the criteria for polymers of low concern (please refer to NICNAS PLC criteria available at nicnas.gov.au), based on molecular weight (MW).

These AP polymers share similar uses as non-ionic surfactants in cosmetic products, including in baby, personal care, and fragrance products. They are also used in domestic and commercial products, including in laundry detergents, household and industrial cleaners (see **Import, Manufacture & Use** section).

The APs in this assessment are structurally related, where the hydrophilic propylene oxide (PO) chain is attached via an ether linkage to the hydrophobic aliphatic alcohol chain (C =6). The alkyl chain can be linear, branched, saturated or unsaturated in the AP group. Propoxylated shorter chain alcohols (C <6) do not show the same degree of surface activity compared with longer chains, and hence they are not included in this assessment.

A generic structural formula of the APs is shown below:

$H–(CH_2)_{x–y}–(O–C_3H_6)_n–OH$

n = average number of propylene oxide (PO) units

x–y = range of carbon units (C =6)

A simpler notation of '$C_{x–y}PO_n$' will be used to represent the corresponding APs in this assessment.

Generally, increasing the carbon chain length increases lipophilicity, whereas increasing alkoxylation increases hydrophilicity of the chemical. These trends are consistent across the linear, branched, saturated or unsaturated APs of varying alkyl chain lengths and propoxylation degrees (Lindner, 2010). It was demonstrated that branching of the APs had a relatively minor impact on calculated partition coefficients (K_{ow}), and hence their biological properties (Lindner, 2010). Further, for unsaturated APs, as the point of unsaturation is generally remote from the carbon where the PO chain is attached, they are expected to have similar physiochemical properties to saturated APs.

On the basis of the analogue and chain-length category approach (i.e. by considering similarities and trends in molecular structure, physiochemical properties (K_{ow}), uses, and hazard profiles), the APs in this assessment are qualified to be assessed as a group. Available data for any APs or read-across information from analogues will be applicable to group members where data are incomplete or unavailable.

Overall, APs are not expected to be systemically toxic, particularly with a high degree of propoxylation. Systemic toxicity was shown to decrease with increasing alkyl chain lengths and/or alkoxylation degrees (ECETOC, 2005; US EPA, 2010).

Commercially available APs are mixtures of homologues of varying carbon chain lengths and it is possible that some of the chemicals with an average alkyl chain length C =6 may also contain shorter alkyl chains C <6. It is not practical to quantify the proportion of shorter C <6 chain lengths present in such chemicals, or these shorter chain lengths may not be present at all. The available data suggest a lack of systemic toxicity for the AE chemicals with potential short alkyl chain presence (NICNASb); therefore, the toxicity of the chemicals in this assessment is unlikely to be significantly affected by the presence of shorter chain alkyl groups.

Import, Manufacture and Use

Australian

The following chemicals have Australian cosmetic, domestic and commercial uses reported in publicly available safety data sheets (SDS).

As emollient or skin conditioning agents:

- Polypropylene glycol (PPG) myristyl ether (CAS No. 63793-60-2)

- PPG-11 and -15 stearyl ether (CAS No. 25231-21-4)

As a foam suppressor for detergents, cleaners and other chemical formulations:

- Alcohols, C9-11, propoxylated (CAS No. 68920-69-4)

International

The following international uses have been identified through the European Commission Cosmetic Ingredients and Substances (CosIng) database; Substances in Preparations in Nordic Countries (SPIN) database; the United States (US) National Library of Medicine Household Products Database; US Personal Care Products Council International Nomenclature Cosmetic Ingredients (INCI) directory; US Environmental Protection Agency (US EPA) National Center for Computational Toxicology (NCCT) resources; and an assessment by the Cosmetic Ingredient Review Expert Panel (CIR, 2001).

The following chemicals have reported cosmetic uses as emollient or skin conditioning agents in:

- baby lotions, oils, and powders, in bubble baths, hair, face, neck and body care, eye and lip make-up, and fragrance products (PPG myristyl ether (CAS No. 63793-60-2); PPG cetyl ether (CAS No. 9035-85-2); PPG oleyl ether (CAS No. 52581-71-2) and PPG-15 stearyl ether (CAS No. 25231-21-4) (with current cosmetic use concentrations of 2–10 % (maximum 25 %)) (CIR, 2001).

The following chemicals have reported domestic and commercial uses in:

- anti-freezing agents (alcohols, tallow, propoxylated (CAS No. 70955-07-6)).
- cleaning and washing products (alcohols, C9-?11, propoxylated (CAS No. 68920-69-4); alcohols, C12-15, propoxylated (CAS No. 74499-34-6); alcohols, tallow, propoxylated (CAS No. 70955-07-6)).
- colouring agents (alcohols, C9-11, propoxylated (CAS No. 68920-69-4); alcohols, tallow, propoxylated (CAS No. 70955-07-6)).
- construction materials (alcohols, tallow, propoxylated (CAS No. 70955-07-6)).
- cutting fluids (PPG oleyl ether (CAS No. 52581-71-2)).
- degreasers (alcohols, C9-11, propoxylated (CAS No. 68920-69-4))
- fuel additives and lubricants (alcohols, C12-15, propoxylated (CAS No. 74499-34-6))

Alcohols, C9-?11, propoxylated (CAS No. 68920-69-4) has reported non-industrial uses in pesticides.

PPG stearyl ether (CAS No. 25231-21-4) and alcohols, C9-11, propoxylated (CAS No. 68920-69-4) have reported non-industrial uses in food and beverage manufacturing.

Restrictions

Australian

No known restrictions have been identified.

International

No known restrictions have been identified.

Existing Worker Health and Safety Controls

Hazard Classification

The chemicals in this group are not listed on the Hazardous Chemicals Information System (HCIS) (Safe Work Australia).

Exposure Standards

Australian

No specific exposure standards are available.

International

No specific exposure standards are available.

Health Hazard Information

The APs in this group contain two defining substructures, the hydrophobic alcohol derived alkyl chain moiety and the hydrophilic propoxylate chain moiety. Chemicals with the same generic CAS number may include a range of propoxylation degrees and properties, which may affect the toxicological properties.

Given limited data are available for APs, information from analogues (e.g. PPG butyl ethers of varying propoxylation degrees or molecular weights (MW); propylene glycol (PG), polypropylene glycols (PPGs), and C6–22 long chain aliphatic alcohols) were used for read-across (CIR, 2001; OECD, 2006).

Overall, APs are not expected to be systemically toxic on the basis of the analogue and chain-length category approach (refer to **Grouping Rationale** section). Therefore, the primary focus of this group assessment is on acute toxicity, skin and eye irritation hazard endpoints. For toxicological endpoints (e.g. sensitisation, genotoxicity, etc.), where data for a specific chemical are available, an evaluation together with consideration of weight of evidence will be carried out to examine the potential toxicity and hazard classification as appropriate.

Toxicokinetics

No toxicokinetic data are available for APs.

Based on read-across information from analogues and related alkoxylate and ethoxylate chemicals, the APs in this assessment (whether linear, branched, saturated or unsaturated) are expected to be absorbed, metabolised and excreted in the urine, faeces and in expired air with minimal tissue distribution, following oral exposure. Excretion following dermal absorption is primarily via the urine.

Read-across information suggests that oral absorption of APs is expected to be rapid and extensive, while dermal absorption is slow and incomplete with a lower penetration rate for human skin than for rat skin. The APs with shorter alkyl and/or PO chains (or smaller MW) are expected to more readily absorbed (orally and dermally) than longer ones (or larger MW). Some APs may enhance penetration of other ingredients through the skin due to their surfactant properties. The overall distribution and excretion are expected to be similar across APs, regardless of their chain lengths. Metabolism is predicted to comprise hydrolysis of the ether linkage followed by oxidation of the alkyl chain to form lower molecular weight compounds, and ultimately carbon dioxide (CO_2) and water, although no metabolic studies were available. Metabolism was found to correlate to the chemical chain lengths, resulting in a higher proportion excreted in expired air (with longer alkyl chains) and/or in the faeces (with longer alkoxylate chains) and less in the urine (CIR, 2001; HERA, 2009; NICNASa; NICNASb).

Acute Toxicity

Oral

Based on the available data and read-across information from analogues, the APs in this group are expected to have low acute oral toxicity.

The acute oral toxicity was inversely proportional to the MW of the chemicals (CIR, 2001).

- PPG-15 stearyl ether or $C_{18}PO_{15}$ (CAS No. 25231-21-4): LD50 (rats) = 6310 mg/kg bw (CIR, 2001; REACH)
- $C_{12–14}PO_5$ (CAS No. 68409-59-6): LD50 (rats) >2000 mg/kg bw (REACH)
- $C_{12–14}PO_{10}$ (CAS No. 68409-59-6): LD50 (mice) >5000 mg/kg bw (REACH)(The CAS No. 68409-59-6 analogues are not listed on the Australian Chemical Inventory.)
- Analogue PG, PGGs and long chain aliphatic alcohols have reported low acute toxicity (CIR, 2001; OECD, 2006)

Dermal

Based on the available data and read-across information from analogues, the chemicals in this group are expected to have low acute dermal toxicity.

- PPG-15 stearyl ether or $C_{18}PO_{15}$ (CAS No. 25231-21-4): LD50 >5000 mg/kg bw (CIR, 2001)
- PPG-2 butyl ether (analogue): LD50 ~ 5860–7130 mg/kg bw (female-male)

Analogue PG, PGGs and long chain aliphatic alcohols have reported low acute toxicity (CIR, 2001; OECD, 2006)

Inhalation

Based on read-across information from analogues and related alkoxylate and ethoxylate chemicals, the APs in this group are expected to have low acute inhalation toxicity.

However, read-across information suggests that the acute toxic thresholds will be reached when rats are exposed to undiluted APs in the form of respirable mists or aerosols, or at concentrations exceeding the saturated vapour in air (OECD, 2006; HERA, 2009; NICNASa; NICNASb).

The following PPG butyl ether analogues were moderately hazardous after vapour or mist exposure. The pulmonary lesions following endotracheal dosing were directly proportional to the molecular weight (MW) of the APs. The chemicals with MW >2000 Da and water solubility <0.1 % are expected to have minimal inhalation (endotracheal) toxicity (CIR, 2001).

- PPG-2 butyl ether: LC50 >saturated vapour
- PPG-9, -18, and -24 butyl ether: rats died after 1-hour vapour exposure, but none was killed during 15-minute exposure
- PPG-33 butyl ether (100 %): moderately hazardous
  - A mist evolved at 170 °C killed 6/6 rats in 4 hours and 1/6 rats in 6 hours.
  - Piloerection and tremors within 7 minutes of endotracheal injection. At necropsy, lung haemorrhages, pneumonitis, and interstitial fibrosis or lung lesions were observed.
- PPG-53 butyl ether: caused interstitial pneumonitis (moderate severity), and
- PPG-5 butyl ether: caused similar lung lesions although at lower severity following endotracheal injection

Corrosion / Irritation

Respiratory Irritation

Inhalation of droplets and/or particles (aerodynamic diameters <10 µm) released from the aerosolised products of these surfactant chemicals may cause respiratory irritation and consequent damage to the lung through prolonged or repeated exposure (NICNASa).

Skin Irritation

Based on the available data, the chemicals in this group may be slightly irritating to skin.

The degree of skin irritation for APs is expected to be dependent on the type of patch (open vs semi-occlusive vs occlusive), exposure time, single vs repeated applications, skin intact condition, and the concentration used. The skin irritating potential appears to be inversely proportional to the chain length or MW of the APs (CIR, 2001; OECD, 2006).

The following chemicals have reported test results on rabbit skin:

- alcohols, tallow, propoxylated or $C_{16–18}PO_{<2.5}$ (CAS No. 70955-07-6): predicted to be non-corrosive and non-irritant to the skin, respectively (OECD test guideline (TG) 431 and 439 – In vitro skin corrosion and irritation: reconstructed human epidermis methods) (REACH)
- PPG-15 stearyl ether or $C_{18}PO_{15}$ (CAS No. 25231-21-4): slight skin irritant, occlusive conditions, concentration not specified (CIR, 2001; REACH)
- PPG oleyl ether (CAS No. 52581-71-2): slight skin irritant, open condition (Galleria Chemica)
- PPG butyl ether analogues were non-irritant (PPG-33) or slight irritant (PPG-2 caused transient erythema in 1/6 rabbits and desquamation in 4/6) to severely skin irritant (undiluted PPG-40 caused minimal to marked capillary injection) (CIR, 2001)

Eye Irritation

Based on the available data, the chemicals in this groupmay be slightly irritating to eyes

The degree of eye irritation for APs is considered concentration-dependent. Rinsing the eye immediately after application of some APs with tap water for 20–30 seconds may reduce the severity of the effects.

The following chemicals have reported test results on rabbit eye:

- alcohols, tallow, propoxylated or $C_{16–18}PO_{<2.5}$ (CAS No. 70955-07-6): predicted ‘not to cause serious eye damage’ and to be non-irritant to the eyes (OECD TG 437 – Bovine corneal opacity and permeability (BCOP) and EpiOcular methods) (REACH)
- PPG-15 stearyl ether or $C_{18}PO_{15}$ undiluted (CAS No. 25231-21-4): non- to slight eye irritant (CIR, 2001; REACH)
- PPG butyl ether analogues caused no ocular toxicity (PPG-33), traces of diffuse corneal necrosis (PPG-15), and minor to moderate corneal injury (0.01 mL PPG-2 caused conjunctival irritation and discharge in 6/6 rabbits, iritis in 4/6, while 0.1 mL caused moderate conjunctival irritation, discharge, iritis, and corneal opacity) (CIR, 2001)

Sensitisation

Skin Sensitisation

Based on the available data and read-across information from related alkoxylate and ethoxylate chemicals (NICNASa; NICNASb), the chemicals in this group are not expected to cause skin sensitisation.

- alcohols, tallow, propoxylated or $C_{16–18}PO_{<2.5}$ (CAS No. 70955-07-6): not skin sensitiser following 3 epicutaneous induction doses at 100 % (day 0, 6, and 14) and a challenge dose at 10 % (day 28); applications were for 6 hours and occlusive (OECD TG 406 – Skin sensitisation using non-adjuvant Buehler method) (REACH)

Observation in humans

Undiluted $C_{16–18}PO<2.5$ (CAS No. 70955-07-6) did not cause skin reactions in 214 volunteers, following one induction and one challenge application. They were 10–14 days apart, occlusive and lasted 72 and 48 hours, respectively (REACH).

Repeated Dose Toxicity

Oral

No data are available.

Dermal

No data are available.

Inhalation

No data are available.

Genotoxicity

Based on the available data and read-across information from analogues and related alkoxylate and ethoxylate chemicals (NICNASa; NICNASb), the APs in this group are not expected to cause germ cell mutagenicity.

In vitro, alcohols, tallow, propoxylated or $C_{16–18}PO_{<2.5}$ (CAS No. 70955-07-6) was negative in (REACH):

- a bacterial reverse mutation test (OECD TG 471) in *Salmonella typhimurium* (TA1535, TA1537, TA98, TA100 and *Escherichia coli* (WP2), with and without metabolic activation.
- a mammalian cell hprt gene mutation test (OECD TG 476) in Chinese hamster lung fibroblasts (V79), with and without metabolic activation.
- a mammalian chromosomal aberration test (OECD TG 473) in V79 cells, with and without metabolic activation.

Carcinogenicity

No data are available.

Reproductive and Developmental Toxicity

No data are available.

Risk Characterisation

Critical Health Effects

The APs in this group are considered to have low toxicity, particularly when formulated to be non-irritating. Irritant effects for some of the chemicals within the group cannot be ruled out when used at high concentrations.

Public Risk Characterisation

Some of the AP chemicals have reported cosmetic, domestic and commercial uses in Australia and overseas. According the Cosmetic Ingredient Review Expert Panel (CIR, 2001), cosmetic use concentrations currently are 2–10 % (maximum 25 %) in a wide range of products, including baby lotions, oils, and powders, bubble baths, hair, face, neck and body care, eye and lip make-up, and fragrances products. The same use concentrations, use patterns, and hence widespread public exposure are expected in Australia, mainly involving exposure via the skin and eyes. Incidental inhalation (from aerosolised or powder products) and ingestion can also occur.

Considering the wide range of domestic products containing these chemicals, there is a possibility of public exposure to the chemicals through secondary exposure via the environment. However, this indirect human exposure is considered to be at very diluted concentrations; and hence, it not considered comparable to direct exposure.

The CIR Expert Panel (CIR, 2001) indicated that up to 95–99 % of the droplets and/or particles (aerodynamic diameters >10 µm) released from cosmetic sprays containing these surfactant chemicals are not expected to be respirable into the gas exchange region of the lung, but likely to deposit in the nasopharyngeal and bronchial regions and subsequently undergo elimination. Aerosol uses leading to inhalation of smaller droplets are not expected for the chemicals in this group.

The Panel determined that cosmetic use concentrations of the alcohol propoxylates are safe when formulated to be non-irritating. However, skin, eye and respiratory irritant effects on exposure could occur with some of the chemicals within the group at high concentrations and/or eye irritation from accidental eye contact cannot be ruled out for some known use concentrations.

The available data for some of the chemicals can be extrapolated to support the safety of all the chemicals in this group. Taking into consideration the current use concentrations, the chemicals are not considered to pose an unreasonable risk to public health when used at low concentrations or when formulated to be non-irritating.

The total surfactant concentration in the products should be considered when determining label instructions, especially where direct dermal and ocular exposures are likely to occur, or when packaging presents the possibility of incidental inhalation or ingestion. Any irritant effects can be mitigated by labelling (such as warning statement—If in eyes wash out immediately with water etc.) and concentration controls. Any controls for these chemicals should be considered as part of a broader review of the management of surfactants in the Poisons Standard (the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Occupational Risk Characterisation

During product formulation, dermal, ocular and inhalation exposure of workers to the chemicals may occur, particularly where manual or open processes are used. These may include transfer and blending activities, quality control analysis, and cleaning and maintenance of equipment. Worker exposure to the chemicals at higher concentrations is expected. The level and route of exposure will vary depending on the method of application and work practices employed.

Given the potential for local health effects when used at high concentrations, the chemicals could pose an unreasonable risk to workers unless adequate control measures to minimise dermal, ocular and inhalation exposure are implemented.

The chemicals currently have no hazard classification for worker health and safety; this is considered appropriate based on the available data.

NICNAS Recommendation

Current risk management measures are considered adequate to protect the public and workers, provided that all requirements are met under workplace health and safety, and poisons legislation as adopted by the relevant state or territory. No further assessment is required.

Regulatory Control

Public Health

The public can be exposed to the chemicals through their presence in domestic (such as laundry and cleaning) or cosmetic products. However, the chemicals are not expected to be contact sensitisers or to be irritating at current use concentrations. There is potential for dermal, ocular and respiratory irritation to occur from use of some chemicals at higher concentrations depending on the use pattern.

A different class of surfactant chemicals (such as sodium lauryl sulfate and its salts) are listed in Schedule 6 of the Poisons Standard.

No specific regulatory controls are recommended for the chemicals in this group as part of this assessment. NICNAS recommends that formulators of products containing these chemicals should take into account the total surfactant concentration in the products when determining label instructions, especially where direct dermal and ocular exposures are likely to occur, or when packaging presents the possibility of incidental inhalation or ingestion. Any irritant effects can be mitigated by labelling (such as warning statement—If in eyes wash out immediately with water etc.) and concentration controls. Any controls for these chemicals should be considered as part of a broader review of the management of surfactants in the SUSMP.

Work Health and Safety

The chemicals are not recommended for classification and labelling aligned with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) as below. This does not consider classification of physical hazards and environmental hazards.

From 1 January 2017, under the model Work Health and Safety Regulations, chemicals are no longer to be classified under the Approved Criteria for Classifying Hazardous Substances system.

Advice for consumers

Products containing the chemical should be used according to label instructions.

Advice for industry

Control measures

Control measures to minimise the risk from dermal, ocular and inhalation exposure to the chemicals at high concentrations should be implemented in accordance with the hierarchy of controls. Approaches to minimise risk include substitution, isolation and engineering controls. Measures required to eliminate, or minimise risk arising from storing, handling and using a hazardous chemical depend on the physical form and the manner in which the chemicals are is used. Examples of control measures that could minimise the risk include, but are not limited to:

- minimising manual processes and work tasks through automating processes;
- work procedures that minimise splashes and spills;
- regularly cleaning equipment and work areas; and

- using protective equipment that is designed, constructed, and operated to ensure that the worker does not come into contact with the chemicals.

Guidance on managing risks from hazardous chemicals are provided in the *Managing risks of hazardous chemicals in the workplace—Code of practice* available on the Safe Work Australia website.

Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

Obligations under workplace health and safety legislation

Information in this report should be taken into account to assist with meeting obligations under workplace health and safety legislation as adopted by the relevant state or territory. This includes, but is not limited to:

- ensuring that hazardous chemicals are correctly classified and labelled;
- ensuring that (m)SDS containing accurate information about the hazards (relating to both health hazards and physicochemical (physical) hazards) of the chemical are prepared; and
- managing risks arising from storing, handling and using a hazardous chemical.

Your work health and safety regulator should be contacted for information on the work health and safety laws in your jurisdiction.

Information on how to prepare an (M)SDS and how to label containers of hazardous chemicals are provided in relevant codes of practice such as the *Preparation of safety data sheets for hazardous chemicals—Code of practice* and *Labelling of workplace hazardous chemicals—Code of practice*, respectively. These codes of practice are available from the Safe Work Australia website.

A review of the physical hazards of these chemicals has not been undertaken as part of this assessment.

References

CosIng (Cosmetic Ingredients & Substances) Database. European Commission. Available at **https://ec.europa.eu/growth/sectors/cosmetics/cosing_en**

Cosmetic Ingredient Review (CIR) 2001. Review Expert Panel. Final report on the safety assessment of PPG-11 and PPG-15 stearyl ethers. International Journal of Toxicology 20(suppl 4):53–59

Globally Harmonised System of Classification and Labelling of Chemicals (GHS) United Nations 2009. Third edition. Accessed November 2019 at **http://www.unece.org/trans/danger/publi/ghs/ghs_rev03/03files_e.html**

Human& Environmental Risk Assessment (HERA) 2009. Alcohol ethoxylates as ingredients of European household cleaning products. Accessed November 2019 at **http://www.heraproject.com**

Lindner GJ 2010. Chemical Clustering for Risk Assessment: Fatty Alcohol Alkoxylates. Journal of ASTM International 7:1–12. doi:10.1520/JAI102874

National Industrial Chemicals Notification and Assessment Scheme (NICNASa). Inventory Multi-tiered Assessment and Prioritisation (IMAP) Human Health Tier II assessment for alkoxylates of aliphatic alcohols (>C6). Australian Government Department of Health. Available at nicnas.gov.au

National Industrial Chemicals Notification and Assessment Scheme (NICNASb). Human Health Tier II assessment for ethoxylates of aliphatic alcohols (>C6). Australian Government Department of Health. Available at nicnas.gov.au

Organisation for Economic Co-operation and Development (OECD) 2006. Long chain alcohols (C6-22 primary aliphatic alcohols). Screening Infomation Assessment Meeting (SIAM) 22, 18–21 April. Accessed December 2019 at **https://hpvchemicals.oecd.org/UI/handler.axd?id=9802ef92-2c9d-4f21-877e-90b6133efd73**

Organisation for Economic Co-operation and Development (OECD) 2014. Guidance on grouping of chemicals, 2nd edn. Series on Testing& Assessment No. 194. Accessed November 2019 at **http://www.oecd.org/chemicalsafety/risk-assessment/groupingofchemicalschemicalcategoriesandread-across**.htm

Personal Care Products Council. International Nomenclature Cosmetic Ingredient (INCI) Dictionary and Handbook. Available at **http://gov.personalcarecouncil.org/jsp/gov/GovHomePage.jsp**

Safe Work Australia. Hazardous Chemical Information System (HCIS). Accessed November 2019 at **http://hcis.safeworkaustralia.gov.au/**

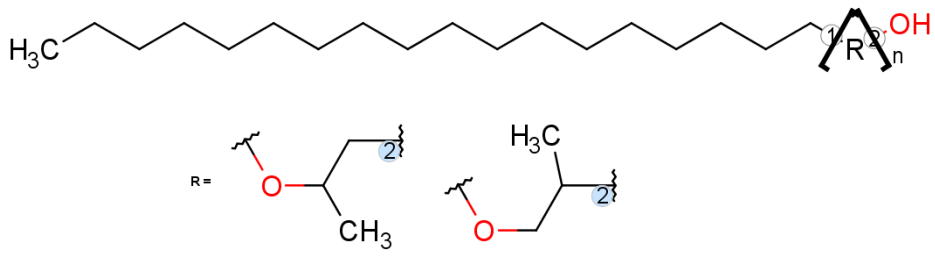
The Poisons Standard October 2019. The Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) No. 25. Accessed November 2019 at **https://www.tga.gov.au/publication/poisons-standard-susmp**

United States Environmental Protection Agency (US EPA). Center for Computational Toxicology and Exposure (CCTE). Available at **https://www.epa.gov/aboutepa/about-center-computational-toxicology-and-exposure-ccte**

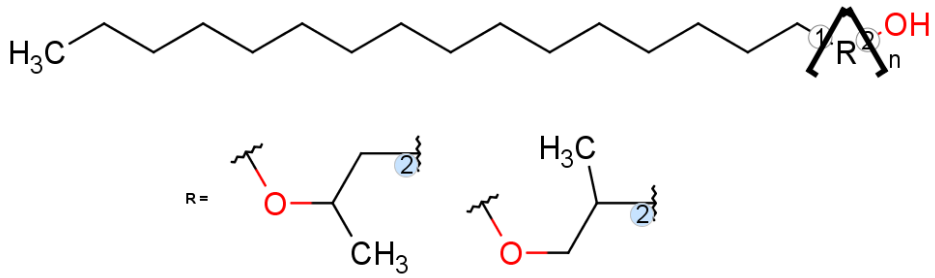
US Household Products Database. US National Library of Medicine. Available at **https://hpd.nlm.nih.gov/index.htm**

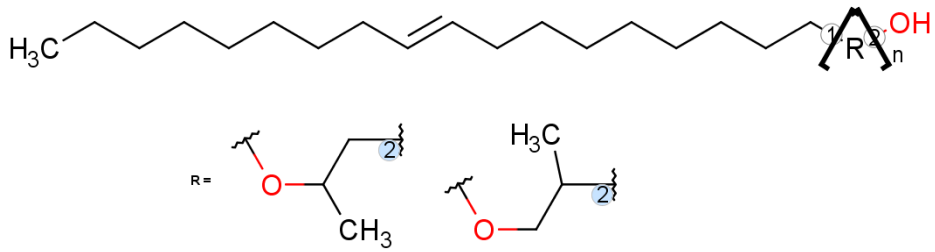
Last Update 12 December 2019

Chemical Identities

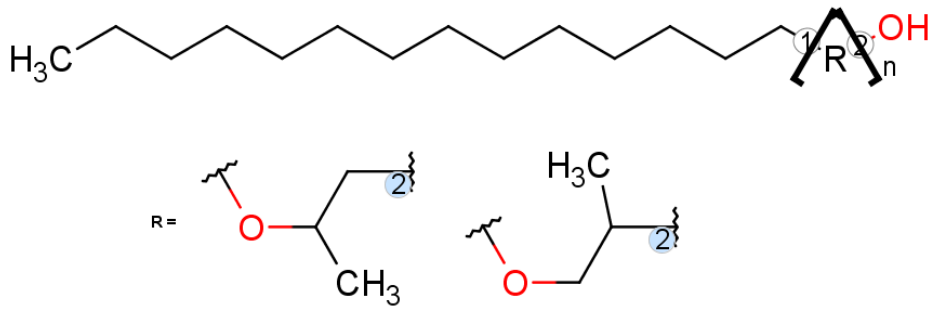
Chemical Name in the Inventory and Synonyms	**Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-octadecyl-.omega.-hydroxy-** polypropylene glycol stearyl ether PPG-11 stearyl ether PPG-15 stearyl ether stearyl alcohol, propoxylated
CAS Number	25231-21-4
Structural Formula	
Molecular Formula	(C3H6O)nC18H38O
Molecular Weight	

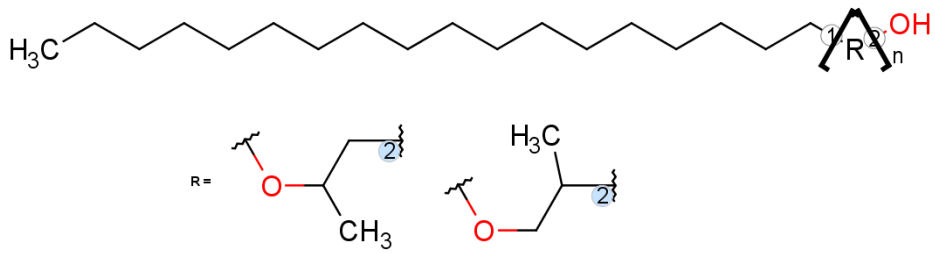
Chemical Name in the Inventory and Synonyms	**Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hexadecyl-.omega.-hydroxy-** polyoxypropylene, cetyl ether polypropylene glycol, hexadecyl ether PPG-10 cetyl ether propoxylated hexadecyl alcohol
CAS Number	9035-85-2
Structural Formula	

	
Molecular Formula	(C3H6O)nC16H34O
Molecular Weight	

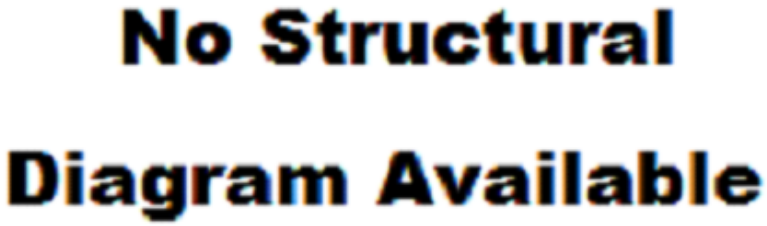
Chemical Name in the Inventory and Synonyms	**Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-9-octadecenyl-.omega.-hydroxy-, (Z)-** polypropylene glycol oleyl ether PPG-10 oleyl ether
CAS Number	52581-71-2
Structural Formula	
Molecular Formula	(C3H6O)nC18H36O
Molecular Weight	

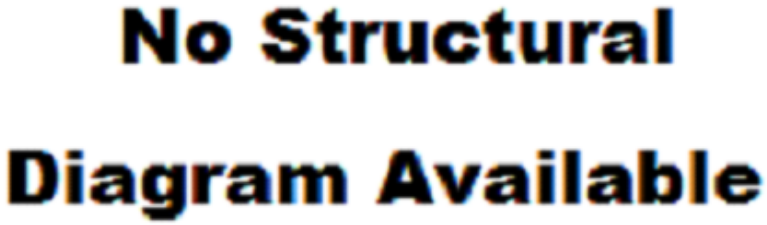
Chemical Name in the Inventory and Synonyms	**Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-tetradecyl-.omega.-hydroxy-** tetradecyl alcohol, propoxylated polypropylene glycol myristyl ether PPG-3 myristyl ether
CAS Number	63793-60-2
Structural Formula	

	
Molecular Formula	(C3H6O)nC14H30O
Molecular Weight	

Chemical Name in the Inventory and Synonyms	**Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, octadecyl ether** polypropylene glycol, octadecyl ether
CAS Number	67922-55-8
Structural Formula	
Molecular Formula	C18H38O.x(C3H6O)nH2O
Molecular Weight	

Chemical Name in the Inventory and Synonyms	**Alcohols, C9-11, propoxylated** C9-11 alcohols, propoxylated
CAS Number	68920-69-4
Structural Formula	

	
Molecular Formula	Unspecified
Molecular Weight	

Chemical Name in the Inventory and Synonyms	**Alcohols, tallow, propoxylated** tallow alcohols, propoxylated alcohols, C16-18 (even numbered) and C18 unsaturated, propoxylated, < 2.5 PO
CAS Number	70955-07-6
Structural Formula	
Molecular Formula	Unspecified
Molecular Weight	

Chemical Name in the Inventory and Synonyms	**Alcohols, C12-15, propoxylated** C12-15 alcohols, propoxylated

CAS Number	74499-34-6
Structural Formula	
Molecular Formula	Unspecified
Molecular Weight	

Chemical Name in the Inventory and Synonyms	**Alcohols, C12-14-secondary, propoxylated** C12-14-secondary alcohols, propoxylated
CAS Number	126950-62-7
Structural Formula	
Molecular Formula	Unspecified
Molecular Weight	

Share this page