SAFETY DATA SHEET

SIMULSOL SL 8

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

1.1 Product identifier

Product trade name : SIMULSOL SL 8

Product code : 38437E

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

Material uses : Non ionic surfactant.

Identified uses
Manufacture of substance APG C8-10; CAS: 68515-73-1 Distribution , Formulation APG C8-10; CAS: 68515-73-1 Industrial use APG C8-10; CAS: 68515-73-1 Professional use , End use APG C8-10; CAS: 68515-73-1

See Annex to the Safety data sheet for additional information in the Exposure Scenario(s).

1.3 Details of the supplier of the safety data sheet

Supplier : SEPPIC S.A.
22 Terrasse Bellini - Paris La Défense
92806 Puteaux CEDEX - France
Phone: +33(0)1 42 91 40 00
Fax: +33(0)1 42 91 41 41

e-mail address of person responsible for this SDS : MSDSinfo.SEPPIC@airliquide.com

1.4 Emergency telephone number

National advisory body/Poison Centre : UNITED KINGDOM :
999

Supplier : SEPPIC
Tél.: +33 (0)5 63 72 69 69

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Eye Dam. 1, H318

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Causes serious eye damage.

Contains : D-Glucopyranose, oligomers, decyl octyl glycosides

Precautionary statements

Prevention : Wear eye or face protection. Wash hands thoroughly after handling.

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

SECTION 2: Hazards identification

2.3 Other hazards

Other hazards which do not result in classification : None known.

ADDITIONAL INFORMATION

Handling : IF CRISTALLISATION OCCURS, HEAT AT 60°C AND REHOMOGENISE BEFORE USE.

Storage : PROTECT FROM FROST.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product description : Solution In water.

Product/ingredient name	Identifiers	%	Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]	Type
D-Glucopyranose, oligomers, decyl octyl glycosides	REACH #: 01-2119488530-36 EC: 550-220-1	40 - 60	Eye Dam. 1, H318 **See Section 16 for the full text of the H statements declared above.**	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If

SECTION 4: First aid measures

unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

IF CRISTALLISATION OCCURS, HEAT AT 60°C AND REHOMOGENISE BEFORE USE.

7.2 Conditions for safe storage, including any incompatibilities

: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

PROTECT FROM FROST.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 7: Handling and storage

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
D-Glucopyranose, oligomers, decyl octyl glycosides	DNEL	Long term Dermal	595000 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	420 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	357000 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	124 mg/m³	Consumers	Systemic
	DNEL	Long term Oral	35.7 mg/kg bw/day	Consumers	Systemic

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
D-Glucopyranose, oligomers, decyl octyl glycosides	Fresh water	0.1 mg/l	Assessment Factors
	Marine water	0.01 mg/l	Assessment Factors
	Fresh water sediment	0.487 mg/kg dwt	Equilibrium Partitioning
	Marine water sediment	0.048 mg/kg dwt	Equilibrium Partitioning
	Sewage Treatment Plant	560 mg/l	Assessment Factors
	Soil	0.654 mg/kg dwt	Assessment Factors

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Individual protection measures

SECTION 8: Exposure controls/personal protection

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Recommended : butyl rubber, fluor rubber, nitrile rubber, PVC.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid.

Colour : Clear., Light yellow

Odour : Characteristic.

pH : 4 to 7

Initial boiling point and boiling range : 100°C

Flash point : Closed cup: >100°C [NFT 60 103.]

Flammability of the product : Non-flammable.

Density : 1,15 g/cm³ **to** 20 °C

Solubility : Soluble in the following materials: cold water.

Viscosity : Dynamic: 700 to 1100 mPa·s

Temperature of viscosity measurement: : 25 °C

9.2 Other information

The information presented in this section does not serve as specifications.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

Conditions of instability : Keep away from oxidizing agents.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : No specific data.

SECTION 10: Stability and reactivity

10.5 Incompatible materials : No specific data.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Test	Dose	Exposure
SIMULSOL SL 8	LD50 Dermal	OCDE 401	>2000 mg/kg	-
	LD50 Oral	OCDE 423	>2000 mg/kg	-

Conclusion/Summary : Not classified as dangerous

Irritation/Corrosion

Conclusion/Summary :

Skin : Not classified.

Eyes : Causes serious eye damage.

Sensitisation

Conclusion/Summary :

Skin : Non-sensitiser to skin.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
D-Glucopyranose, oligomers, decyl octyl glycosides	OCDE 471	Experiment: In vitro Subject: Bacteria	Negative
	OCDE 476	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OCDE 473	Experiment: In vitro Subject: Mammalian-Animal	Negative
	OCDE 474	Experiment: In vivo Subject: Mammalian-Animal	Negative

Conclusion/Summary : Not mutagenic in a standard battery of genetic toxicological tests.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Test	Dose	Exposure
D-Glucopyranose, oligomers, decyl octyl glycosides	Negative	Negative	Negative	-	Oral: 1000 mg/kg bw/day	-

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Delayed and immediate effects and also chronic effects from short and long term exposure

SECTION 11: Toxicological information

Short term exposure

Long term exposure

Potential chronic health effects

Chronic toxicity

Product/ingredient name	Result	Test	Dose	Exposure
D-Glucopyranose, oligomers, decyl octyl glycosides	Sub-chronic NOAEL Oral	-	1000 mg/kg bw/day	-

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Test	Species	Exposure
SIMULSOL SL 8	Acute EC50 20.71 mg/l Marine water	ISO 10253 (2006)	Algae - Skeletonema costatum	72 hours
	Acute LC50 151 mg/l Marine water	ISO 14669 (1999)	Crustaceans - Acartia tonsa	48 hours
	Acute LC50 21 mg/l Marine water	OCDE 203	Fish - Cyprinodon variegatus	96 hours
D-Glucopyranose, oligomers, decyl octyl glycosides	Acute EC50 27 to 37 mg/l Fresh water	-	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 >100 mg/l Fresh water	OCDE 202	Crustaceans - Daphnia magna	48 hours
	Acute LC50 100 to 126 mg/l Fresh water	OCDE 203	Fish - Danio rerio	96 hours
	Chronic NOEC 1 to 4 mg/l Fresh water	OCDE 202	Crustaceans - Daphnia magna	21 days
	Chronic NOEC 1 to 3.2 mg/l Fresh water	-	Fish - Danio rerio	28 days

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
D-Glucopyranose, oligomers, decyl octyl glycosides	OCDE 301E	100 % - Readily - 28 days	-	-

Conclusion/Summary : This product is readily biodegradable.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
SIMULSOL SL 8	-	-	Readily
D-Glucopyranose, oligomers, decyl octyl glycosides	-	-	Readily

12.3 Bioaccumulative potential

SECTION 12: Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
D-Glucopyranose, oligomers, decyl octyl glycosides	<1.77	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
14.6 Special precautions for user	**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.			

SECTION 14: Transport information

Additional information	-	-	-	-

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

EC number : 500-220-1

15.2 Chemical Safety Assessment : Complete.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Eye Dam. 1, H318	Calculation method

Full text of abbreviated H statements : H318 Causes serious eye damage.

Full text of classifications [CLP/GHS] : Eye Dam. 1, H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1

History

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Version : 6

Notice to reader

SECTION 16: Other information

The information contained in this document is provided as a guideline; it is based on the extent of SEPPIC's knowledge regarding the product on the date indicated above. It applies to the product as is, in conformity with the specifications provided by SEPPIC*.
Should the product undergo chemical transformation or be combined or mixed with other substances, it is the sole responsibility of the user to ensure that no new danger appear. Given that the use of this information is beyond the control of SEPPIC*, SEPPIC* provides no warranty, whether express or implied, and assumes no responsibility, regarding the use of this information and of the user's product.
SEPPIC* being SEPPIC SA and its subsidiaries (addresses available on www.seppic.com)

Identification of the substance or mixture

Product definition : Mixture

Section 1 - Title

Number of the ES	: **1**
For substance	: **APG C8-10**
Further information	: **Processes, tasks, activities covered : Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.**

List of use descriptors : **Identified use name:** Manufacture of substance APG C8-10; CAS: 68515-73-1
Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC15
Sector of end use: SU03, SU08, SU09
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC01

Health Contributing scenarios : **General exposures**
Laboratory activities
Bulk transfers
Equipment cleaning and maintenance
Storage

Section 2 - Exposure controls

Contributing scenario : (Environment)

Amounts used	: Annual site tonnage3000
Frequency and duration of use	: Exposure duration per year:300 Covers frequency up to: daily, yearly use
Environment factors not influenced by risk management	: Waste water pretreatment: 500 m³/d (On-site) Waste water treatment: Municipal STP River flow rate:1.5 x 10E6 m³/d
Other given operational conditions affecting environmental exposure	: Common practices vary across sites thus conservative process release estimates used. Release fraction to air from process:< 0.1% Release fraction to wastewater from process:<0.1% Release fraction to soil from process:0% (Readily biodegradable) Local freshwater dilution factor1:10
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: Use of closed transfers of liquids from storage to production equipment (e.g. metered piped or pumped additions). . Use of closed production equipment, with no extraction, except when opening vessels for additions/sampling. . Use of closed filling equipment. . Store finished products in closed containers (e.g., bulk tanks, drums, cans).
Risk management measures - Air	: In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Risk management measures - Water	: Neutralisation is normally necessary before waste water is discharged into water treatment plants. Precipitation, Sedimentation
Organisational measures to prevent/limit release from site	: Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases. A leak prevention plan is needed to prevent low level continual releases. A storm water management plan is needed to ensure that the wastewater treatment plant is not overloaded with uncontaminated water. minimise water use and curtail all unnecessary waste water generation. Maximise waste water reuse. Good housekeeping - e.g. inspection procedures will ensure that there are no leaks to soil Bund storage facilities to prevent soil and water pollution in the event of spillage. Prevent leaks and prevent soil/water pollution caused by leaks.
Conditions and measures related to municipal sewage treatment plant	: All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.

Conditions and measures related to external treatment of waste for disposal	:	Sludge should be incinerated, contained or reclaimed.

Contributing scenario : General exposures (Workers:)

Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	:	> 4 h (half shift). 330 days
Other given operational conditions affecting workers exposure	:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Ensure good industrial hygiene. Industrial applications
Technical conditions and measures at process level (source) to prevent release	:	Use a sampling system designed to control exposure. Transfer via enclosed lines.
Engineering controls	:	Avoid splashing.
Ventilation control measures	:	Provide enhanced general ventilation by mechanical means. Fill containers/cans at dedicated fill points supplied with local extract ventilation.
Personal protection	:	Wear suitable gloves tested to EN374. Use suitable eye protection. (Minima: Type EN166) Wear work clothing with long sleeves.

Contributing scenario : Laboratory activities (Workers:)

Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	:	15 min. -1h , 330 days
Other given operational conditions affecting workers exposure	:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Ensure good industrial hygiene. Industrial applications
Engineering controls	:	Avoid splashing.
Ventilation control measures	:	General ventilation.
Personal protection	:	Wear work clothing with long sleeves. Wear eye protection.

Contributing scenario : Bulk transfers (Workers:)

Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	:	1 - 4 hours , 220 days
Other given operational conditions affecting workers exposure	:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Ensure good industrial hygiene. Industrial applications
Engineering controls	:	Transfer via enclosed lines.
Personal protection	:	Wear work clothing with long sleeves. Wear eye protection. Wear suitable gloves.

Contributing scenario : Equipment cleaning and maintenance (Workers:)

Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	:	> 4 h (half shift). 330 days
Other given operational conditions affecting workers exposure	:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Ensure good industrial hygiene. Industrial applications

Engineering controls	:	Drain the system before any introduction into the system. Drain and clean the system before any maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Personal protection	:	Wear work clothing with long sleeves. Wear eye protection. Wear suitable gloves.

Contributing scenario : Storage (Workers:)

Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	:	1 - 4 hours , 330 days
Other given operational conditions affecting workers exposure	:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Ensure good industrial hygiene. Industrial applications
Engineering controls	:	Use dedicated equipment. (Keep away from heat. Keep in a well-ventilated place.)
Ventilation control measures	:	Natural ventilation.
Organisational measures to prevent/limit releases, dispersion and exposure	:	Use dedicated equipment. (Keep away from heat. Keep in a well-ventilated place.)

Section 3 - Exposure estimation and reference to its source

Contributing scenario : -Exposure estimation and reference to its source -Workers:

Exposure assessment (human):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. (Risk characterisation ratio : Less than 1.)

Contributing scenario : - Exposure estimation and reference to its source -Environment:

Exposure assessment (environment):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/PNEC): Less than 1.
M-Safe	:	Fresh water :1.1E4 kg/day Soil :9.5E4 kg/day Marine water :1.1E4 kg/day Human :7.4E10 kg/day

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	:	Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Health	:	Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Identification of the substance or mixture

Product definition : Mixture

Section 1 - Title

Number of the ES	: **2**
For substance	: **APG C8-10**
Further information	: **Processes, tasks, activities covered : Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.**

List of use descriptors : **Identified use name:** Distribution , Formulation APG C8-10; CAS: 68515-73-1
Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC14, PROC15
Sector of end use: SU03, SU10
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC02

Environmental contributing scenarios : **Formulation of preparations -** ERC02

Health Contributing scenarios : **General exposures**
Laboratory activities
Bulk transfers
Equipment cleaning and maintenance
Storage

Section 2 - Exposure controls

Contributing scenario : Formulation of preparations (Environment)

Amounts used	: Annual site tonnage3000
Frequency and duration of use	: Exposure duration per year:220 Covers frequency up to: daily, yearly use
Environment factors not influenced by risk management	: Waste water pretreatment: 500 m³/d (On-site) Waste water treatment: Municipal STP River flow rate: 1.5x10E6 m³/d
Other given operational conditions affecting environmental exposure	: Release fraction to air from process:0.02% Release fraction to wastewater from process:0.1% Release fraction to soil from process:0% Local freshwater dilution factor1:10
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: Use of closed transfers of liquids from storage to production equipment (e.g. metered piped or pumped additions).. Use of closed production equipment, with no extraction, except when opening vessels for additions/sampling.. Use of closed filling equipment.. Store finished products in closed containers (e.g., bulk tanks, drums, cans).. Formulation activity is assumed to be a predominantly enclosed process..
Risk management measures - Air	: In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Risk management measures - Water	: Neutralisation is normally necessary before waste water is discharged into water treatment plants. Precipitation, Sedimentation
Organisational measures to prevent/limit release from site	: Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases. A leak prevention plan is needed to prevent low level continual releases. A storm water management plan is needed to ensure that the wastewater treatment plant is not overloaded with uncontaminated water. minimise water use and curtail all unnecessary waste water generation. Maximise waste water reuse. Good housekeeping - e.g. inspection procedures will ensure that there are no leaks to soil Bund storage facilities to prevent soil and water pollution in the event of spillage. Prevent leaks and prevent soil/water pollution caused by leaks.

Conditions and measures related to municipal sewage treatment plant	:	All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.
Conditions and measures related to external treatment of waste for disposal	:	Sludge should be incinerated, contained or reclaimed.

Contributing scenario : General exposures (Workers:)

Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	:	> 4 h (half shift). 330 days
Other given operational conditions affecting workers exposure	:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Ensure good industrial hygiene. Industrial applications
Engineering controls	:	Avoid splashing. Use a sampling system designed to control exposure. Transfer via enclosed lines.
Ventilation control measures	:	Provide enhanced general ventilation by mechanical means. Fill containers/cans at dedicated fill points supplied with local extract ventilation.
Personal protection	:	Wear suitable gloves tested to EN374. Use suitable eye protection. (Minima: Type EN166) Wear work clothing with long sleeves.

Contributing scenario : Laboratory activities (Workers:)

Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	:	15 min. -1h , 330 days
Other given operational conditions affecting workers exposure	:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Ensure good industrial hygiene. Industrial applications
Engineering controls	:	Avoid splashing.
Ventilation control measures	:	General ventilation.
Personal protection	:	Wear work clothing with long sleeves. Wear eye protection.

Contributing scenario : Bulk transfers (Workers:)

Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	:	1 - 4 hours , 220 days
Other given operational conditions affecting workers exposure	:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Ensure good industrial hygiene. Industrial applications
Engineering controls	:	Transfer via enclosed lines.
Personal protection	:	Wear work clothing with long sleeves. Wear eye protection. Wear suitable gloves.

Contributing scenario : Equipment cleaning and maintenance (Workers:)

Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	:	> 4 h (half shift). 330 days
Other given operational conditions affecting workers exposure	:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Ensure good industrial hygiene. Industrial applications
Engineering controls	:	Drain the system before any introduction into the system. Drain and clean the system before any maintenance. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.
Personal protection	:	Wear work clothing with long sleeves. Wear eye protection. Wear suitable gloves.

Contributing scenario : Storage (Workers:)

Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 100% (unless stated differently).
Frequency and duration of use	:	1 - 4 hours , 330 days
Other given operational conditions affecting workers exposure	:	Assumes use at not more than 20°C above ambient temperature, unless stated differently. Ensure good industrial hygiene. Industrial applications
Ventilation control measures	:	Natural ventilation.
Organisational measures to prevent/limit releases, dispersion and exposure	:	Use dedicated equipment. (Keep away from heat. Keep in a well-ventilated place.)

Section 3 - Exposure estimation and reference to its source

Contributing scenario : -Exposure estimation and reference to its source -Workers:

Exposure assessment (human):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. (Risk characterisation ratio : Less than 1.)

Contributing scenario : Formulation of preparations - Exposure estimation and reference to its source - Environment:

Exposure assessment (environment):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/ PNEC): Less than 1.
M-Safe	:	Fresh water:1.1E5 kg/day Soil :9.5E5 kg/day Marine water :1.1E5 kg/day Human :1.7E11 kg/day

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	:	Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Health	:	Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Identification of the substance or mixture

Product definition : Mixture

Section 1 - Title

Number of the ES	: **3**
For substance	: **APG C8-10**
Further information	: **Processes, tasks, activities covered : Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities. Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance. Use in agrochemicals**

List of use descriptors : **Identified use name:** Industrial use APG C8-10; CAS: 68515-73-1
Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04, ERC05, ERC06d, ERC07
Market sector by type of chemical product: PC02, PC04, PC09a, PC13, PC16, PC17, PC18, PC24, PC28, PC39

Environmental contributing scenarios : **Industrial use of processing aids in processes and products, not becoming part of articles**
Industrial use of substances in closed systems
Industrial use resulting in inclusion into or onto a matrix
Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

Section 2 - Exposure controls

Contributing scenario : Industrial use of processing aids in processes and products, not becoming part of articles (Environment)

Amounts used	: Annual site tonnage3000
Frequency and duration of use	: Exposure duration per year:220 . Covers frequency up to: daily, yearly use
Environment factors not influenced by risk management	: River flow rate: 15x10E6 m³/d
Other given operational conditions affecting environmental exposure	: Release to air from process: 0% Release fraction to wastewater from process: 100% Release fraction to soil from process: 0% Fraction of Regional tonnage used locally 3.67% Local freshwater dilution factor 1:10
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	: Use of closed production equipment, with no extraction, except when opening vessels for additions/sampling.
Risk management measures - Water	: Neutralisation is normally necessary before waste water is discharged into water treatment plants. Precipitation , Sedimentation

Organisational measures to prevent/limit release from site	:	Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases. A leak prevention plan is needed to prevent low level continual releases. A storm water management plan is needed to ensure that the wastewater treatment plant is not overloaded with uncontaminated water. minimise water use and curtail all unnecessary waste water generation. Maximise waste water reuse. Good housekeeping - e.g. inspection procedures will ensure that there are no leaks to soil Bund storage facilities to prevent soil and water pollution in the event of spillage. Prevent leaks and prevent soil/water pollution caused by leaks. Store finished products in closed containers (e.g., bulk tanks, drums, cans).
Conditions and measures related to municipal sewage treatment plant	:	All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.
Suitable waste treatment	:	Sludge should be incinerated, contained or reclaimed.

Contributing scenario : Industrial use of substances in closed systems (Environment)

Amounts used	:	Annual site tonnage3000
Frequency and duration of use	:	Exposure duration per year:300 . Covers frequency up to: daily, yearly use
Environment factors not influenced by risk management	:	River flow rate: 15x10E6 m³/d
Other given operational conditions affecting environmental exposure	:	Release fraction to air from process:0% Release fraction to wastewater from process:0% Release fraction to soil from process:0% Fraction of Regional tonnage used locally0.2% Local freshwater dilution factor1:10
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	:	Use of closed production equipment, with no extraction, except when opening vessels for additions/sampling.
Organisational measures to prevent/limit release from site	:	Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases. Store finished products in closed containers (e.g., bulk tanks, drums, cans).

Contributing scenario : Industrial use resulting in inclusion into or onto a matrix (Environment)

Amounts used	:	Annual site tonnage3000
Frequency and duration of use	:	Exposure duration per year:220 . Covers frequency up to: daily, yearly use
Environment factors not influenced by risk management	:	River flow rate: 15x10E6 m³/d
Other given operational conditions affecting environmental exposure	:	Release fraction to air from process:0% Release fraction to wastewater from process:5% Release fraction to soil from process:0% Fraction of Regional tonnage used locally3.67% Local freshwater dilution factor1:10
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	:	Use of closed production equipment, with no extraction, except when opening vessels for additions/sampling.
Risk management measures - Water	:	Neutralisation is normally necessary before waste water is discharged into water treatment plants. Precipitation , Sedimentation
Organisational measures to prevent/limit release from site	:	Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases. A leak prevention plan is needed to prevent low level continual releases. A storm water management plan is needed to ensure that the wastewater treatment plant is not overloaded with uncontaminated water. minimise water use and curtail all unnecessary waste water generation. Maximise waste water reuse. Bund storage facilities to prevent soil and water pollution in the event of spillage. Prevent leaks and prevent soil/water pollution caused by leaks. Store finished products in closed containers (e.g., bulk tanks, drums, cans).

Conditions and measures related to municipal sewage treatment plant	:	All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.

Contributing scenario : Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers (Environment)

Amounts used	:	Annual site tonnage3000
Frequency and duration of use	:	Exposure duration per year:300 . Covers frequency up to: daily, yearly use
Environment factors not influenced by risk management	:	River flow rate: 15x10E6 m³/d
Other given operational conditions affecting environmental exposure	:	Release fraction to air from process:0% Release fraction to wastewater from process:0.2% Release fraction to soil from process:0% Fraction of Regional tonnage used locally0.2% Local freshwater dilution factor1:10
Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil	:	Use of closed production equipment, with no extraction, except when opening vessels for additions/sampling.
Risk management measures - Water	:	Neutralisation is normally necessary before waste water is discharged into water treatment plants. Precipitation , Sedimentation
Organisational measures to prevent/limit release from site	:	Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases. A leak prevention plan is needed to prevent low level continual releases. A storm water management plan is needed to ensure that the wastewater treatment plant is not overloaded with uncontaminated water. minimise water use and curtail all unnecessary waste water generation. Maximise waste water reuse. Bund storage facilities to prevent soil and water pollution in the event of spillage. Prevent leaks and prevent soil/water pollution caused by leaks. Store finished products in closed containers (e.g., bulk tanks, drums, cans).
Conditions and measures related to municipal sewage treatment plant	:	All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.

Contributing scenario : (Workers:)

Concentration of substance in mixture or article	:	Covers percentage substance in the product up to 75%
Frequency and duration of use	:	> 4 h (half shift).
Other given operational conditions affecting workers exposure	:	Ensure good industrial hygiene. Industrial applications
Ventilation control measures	:	Provide enhanced general ventilation by mechanical means.
Personal protection	:	Wear suitable gloves tested to EN374. Use suitable eye protection. (Minima: Type EN166) Wear work clothing with long sleeves.

Section 3 - Exposure estimation and reference to its source

Contributing scenario : -Exposure estimation and reference to its source -Workers:

Exposure assessment (human):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. (Risk characterisation ratio : Less than 1.)

Contributing scenario : Industrial use of processing aids in processes and products, not becoming part of articles - Exposure estimation and reference to its source -Environment:

Exposure assessment (environment):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/PNEC): Less than 1.
M-Safe	:	Fresh water :111.3kg/day Soil :955.3kg/day Marine water :111.3kg/day Human :1.0E8 kg/day

Contributing scenario : Industrial use of substances in closed systems - Exposure estimation and reference to its source -Environment:

Exposure assessment (environment):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/PNEC): Less than 1.
M-Safe	:	Fresh water :373.6kg/day Soil :3.3E5 kg/day Marine water :361.4kg/day Human :4.1E6 kg/day

Contributing scenario : Industrial use resulting in inclusion into or onto a matrix - Exposure estimation and reference to its source -Environment:

Exposure assessment (environment):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/PNEC): Less than 1.
M-Safe	:	Fresh water :1815.6 kg/day Soil :1.9E4 kg/day Marine water :1803.7 kg/day Human:1.0E8 kg/day

Contributing scenario : Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers - Exposure estimation and reference to its source -Environment:

Exposure assessment (environment):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/PNEC): Less than 1.
M-Safe	:	Fresh water :373.6 kg/day Soil :3.3E5 kg/day Marine water :361.4kg/day Human :4.1E6 kg/day

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	:	Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Health	:	Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Identification of the substance or mixture

Product definition : Mixture

Section 1 - Title

Number of the ES	: **4**
For substance	: **APG C8-10**
Further information	: **Processes, tasks, activities covered:** **Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities.** **Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).** **Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.** **Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.** **Covers the use of the substance for the treatment of water in open and closed systems.**

List of use descriptors : **Identified use name:** Professional use , End use APG C8-10; CAS: 68515-73-1
Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC06, PROC07, PROC08a, PROC08b, PROC09, PROC10, PROC11, PROC13, PROC14, PROC15, PROC16, PROC17, PROC19, PROC20
Sector of end use: SU21, SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a, ERC08b, ERC08d, ERC08e, ERC08f, ERC09a, ERC09b
Market sector by type of chemical product: PC01, PC02, PC03, PC04, PC09a, PC12, PC13, PC16, PC17, PC18, PC24, PC28, PC31, PC35, PC39

Environmental contributing scenarios : **Wide dispersive indoor use of reactive substances in open systems**
Wide dispersive outdoor use of processing aids in open systems
Wide dispersive outdoor use of reactive substances in open systems
Wide dispersive outdoor use resulting in inclusion into or onto a matrix
Wide dispersive indoor use of substances in closed systems
Wide dispersive outdoor use of substances in closed systems
Wide dispersive indoor use of processing aids in open systems

Health Contributing scenarios : **High substance range in the preparation**
Medium substance range in the preparation
Low substance range in the preparation

Section 2 - Exposure controls

Contributing scenario : Wide dispersive indoor use of reactive substances in open systems (Environment)

Amounts used	:	Amounts used :1000 Tonnes/year (Professional use) Amounts used :150 Tonnes/year (End use)
Frequency and duration of use	:	Exposure duration per year: 365 days.
Environment factors not influenced by risk management	:	River flow rate: 1.5x10E6 m³/d
Other given operational conditions affecting environmental exposure	:	Professional use : Release fraction to air from process:0% Release fraction to wastewater from process:100% Release fraction to soil from process:0% Fraction of Regional tonnage used locally0.08% Local freshwater dilution factor1:10 End use : Release fraction to air from process:0.1% Release fraction to wastewater from process:2% Release fraction to soil from process:0% Fraction of Regional tonnage used locally0.2% Local freshwater dilution factor No.
Organisational measures to prevent/limit release from site	:	minimise water use and curtail all unnecessary waste water generation. Store finished products in closed containers (e.g., bulk tanks, drums, cans).

Contributing scenario : Wide dispersive outdoor use of processing aids in open systems (Environment)

Amounts used	:	Amounts used :1000 Tonnes/year (Professional use) Amounts used :150 Tonnes/year (End use)
Frequency and duration of use	:	Exposure duration per year: 365 days.
Environment factors not influenced by risk management	:	River flow rate: 1.5x10E6 m³/d
Other given operational conditions affecting environmental exposure	:	Professional use : Release fraction to air from process:95% Release fraction to wastewater from process:2.5% Release fraction to soil from process:2.5% Fraction of Regional tonnage used locally0.05% Local freshwater dilution factor1:10 End use : Release fraction to air from process:100% Release fraction to wastewater from process:100% Release fraction to soil from process:20% Fraction of Regional tonnage used locally0.2% Local freshwater dilution factor No.
Organisational measures to prevent/limit release from site	:	minimise water use and curtail all unnecessary waste water generation. Store finished products in closed containers (e.g., bulk tanks, drums, cans).

Contributing scenario : Wide dispersive outdoor use of reactive substances in open systems (Environment)

Amounts used	:	Amounts used :1000 Tonnes/year (Professional use) Amounts used :150 Tonnes/year (End use)
Frequency and duration of use	:	Exposure duration per year: 365 days.
Environment factors not influenced by risk management	:	River flow rate: 1.5x10E6 m³/d
Other given operational conditions affecting environmental exposure	:	Professional use : Release fraction to air from process:0.1% Release fraction to wastewater from process:2% Release fraction to soil from process:1% Fraction of Regional tonnage used locally0.05% Local freshwater dilution factor1:10 End use : Release fraction to air from process:0.1% Release fraction to wastewater from process:2% Release fraction to soil from process:1%

		Fraction of Regional tonnage used locally0.2% Local freshwater dilution factor No.
Organisational measures to prevent/limit release from site	:	minimise water use and curtail all unnecessary waste water generation. Store finished products in closed containers (e.g., bulk tanks, drums, cans).

Contributing scenario : Wide dispersive outdoor use resulting in inclusion into or onto a matrix (Environment)

Amounts used	:	Amounts used :1000 Tonnes/year (Professional use)
Frequency and duration of use	:	Exposure duration per year: 365 days.
Environment factors not influenced by risk management	:	River flow rate: 1.5x10E6 m³/d
Other given operational conditions affecting environmental exposure	:	Professional use : Release fraction to air from process:1% Release fraction to wastewater from process:99% Release fraction to soil from process:0% Fraction of Regional tonnage used locally1.46% Local freshwater dilution factor1:10
Organisational measures to prevent/limit release from site	:	minimise water use and curtail all unnecessary waste water generation. Store finished products in closed containers (e.g., bulk tanks, drums, cans).

Contributing scenario : Wide dispersive indoor use of substances in closed systems (Environment)

Amounts used	:	Amounts used :1000 Tonnes/year (Professional use) Amounts used :150 Tonnes/year (End use)
Frequency and duration of use	:	Exposure duration per year: 365 days.
Environment factors not influenced by risk management	:	River flow rate: 1.5x10E6 m³/d
Other given operational conditions affecting environmental exposure	:	Professional use : Release fraction to air from process:5% Release fraction to wastewater from process:2.5% Release fraction to soil from process:0% Fraction of Regional tonnage used locally0.05% Local freshwater dilution factor1:10 End use : Release fraction to air from process:5% Release fraction to wastewater from process:0% Release fraction to soil from process:0% Fraction of Regional tonnage used locally0.2% Local freshwater dilution factor No.
Organisational measures to prevent/limit release from site	:	minimise water use and curtail all unnecessary waste water generation. Store finished products in closed containers (e.g., bulk tanks, drums, cans).

Contributing scenario : Wide dispersive outdoor use of substances in closed systems (Environment)

Amounts used	:	Amounts used :1000 Tonnes/year (Professional use) Amounts used :150 Tonnes/year (End use)
Frequency and duration of use	:	Exposure duration per year: 365 days.
Environment factors not influenced by risk management	:	River flow rate: 1.5x10E6 m³/d
Other given operational conditions affecting environmental exposure	:	Professional use : Release fraction to air from process:0.5% Release fraction to wastewater from process:0% Release fraction to soil from process:0% Fraction of Regional tonnage used locally0.05% Local freshwater dilution factor1:10 End use : Release fraction to air from process:5% Release fraction to wastewater from process:5% Release fraction to soil from process:5% Fraction of Regional tonnage used locally0.2%

Local freshwater dilution factor No.

Organisational measures to prevent/limit release from site : minimise water use and curtail all unnecessary waste water generation. Store finished products in closed containers (e.g., bulk tanks, drums, cans).

Contributing scenario : Wide dispersive indoor use of processing aids in open systems (Environment)

Amounts used : Amounts used :1000 Tonnes/year (Professional use)
Amounts used :150 Tonnes/year (End use)

Frequency and duration of use : Exposure duration per year:365

Environment factors not influenced by risk management : River flow rate: 1.5x10E6 m³/d

Other given operational conditions affecting environmental exposure : Professional use :
Release fraction to air from process:50%
Release fraction to wastewater from process:50%
Release fraction to soil from process:0%
Fraction of Regional tonnage used locally0.05%
Local freshwater dilution factor1:10
End use :
Release fraction to air from process:100%
Release fraction to wastewater from process:100%
Release fraction to soil from process:0%
Fraction of Regional tonnage used locally0.2%
Local freshwater dilution factor No.

Organisational measures to prevent/limit release from site : minimise water use and curtail all unnecessary waste water generation. Store finished products in closed containers (e.g., bulk tanks, drums, cans).

Contributing scenario : High substance range in the preparation (Workers:)

Concentration of substance in mixture or article : >75%

Frequency and duration of use : >4 h (half shift). Exposure duration per year: 220 days

Human factors not influenced by risk management : Skin contact : hands

Other given operational conditions affecting workers exposure : Outdoor (>20m3)
The saturated vapour concentration is far below the DNEL. Hence, the risk is considered negligible via the inhalation route. (SVC=[VP/((8.31x293)/MW) at 20°C]=1.98mg/m3)
Good hygiene practices and housekeeping measures
Unless otherwise stated below, wear standard working clothes and shoes.
Regular training in workplace hygiene practice and proper use of personal protective equipment are required.

Personal protection : Gloves. Eye protection equipment (i.e. goggles or visors) must be worn, unless potential contact with eye can be excluded by the nature and type of application (e.g. closed process).

Contributing scenario : Medium substance range in the preparation (Workers:)

Concentration of substance in mixture or article : 1 - 75%

Frequency and duration of use : > 4 h (half shift). Exposure duration per year:365 days

Human factors not influenced by risk management : Skin contact : Whole body

Other given operational conditions affecting workers exposure	: Outdoor (>20m3) The saturated vapour concentration is far below the DNEL. Hence, the risk is considered negligible via the inhalation route. (SVC=[VP/((8.31x293)/MW) at 20°C]=1.98mg/m3) Good hygiene practices and housekeeping measures Unless otherwise stated below, wear standard working clothes and shoes. Regular training in workplace hygiene practice and proper use of personal protective equipment are required.
Organisational measures to prevent/limit releases, dispersion and exposure	: Ensure operatives are trained to minimise exposures.
Personal protection	: Gloves. Eye protection equipment (i.e. goggles or visors) must be worn, unless potential contact with eye can be excluded by the nature and type of application (e.g. closed process).

Contributing scenario : Low substance range in the preparation (Workers:)

Concentration of substance in mixture or article	: <1%
Frequency and duration of use	: > 4 h (half shift). Exposure duration per year:365 days
Human factors not influenced by risk management	: Skin contact : Whole body
Other given operational conditions affecting workers exposure	: Outdoor (>20m3). Ensure good industrial hygiene. The saturated vapour concentration is far below the DNEL. Hence, the risk is considered negligible via the inhalation route. (SVC=[VP/((8.31x293)/MW) at 20°C]=1.98mg/m3) The secondary exposure is far lower than the DNEL. Hence, the risk is considered negligible (Oral , Dermal)
Technical conditions and measures at process level (source) to prevent release	: No specific measures identified. Allow time for product to drain from workpiece. Stay upwind/keep distance from source.

Section 3 - Exposure estimation and reference to its source

Contributing scenario : -Exposure estimation and reference to its source -Workers:

Exposure assessment (human):	: A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	: Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented. (Risk characterisation ratio : Less than 1.)

Contributing scenario : Wide dispersive indoor use of reactive substances in open systems - Exposure estimation and reference to its source -Environment:

Exposure assessment (environment):	: A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	: Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/PNEC): Less than 1.
M-Safe	: Professional use : Fresh water :16.3kg/day Soil :37.1kg/day Marine water :12.5kg/day Human:2.1E4kg/day End use : Fresh water :43.2 kg/day Soil :154.4 kg/day Marine water :36.0 kg/day Human :8.4E4 kg/day

Contributing scenario : Wide dispersive outdoor use of processing aids in open systems - Exposure estimation and reference to its source -Environment:

Exposure assessment (environment):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/PNEC): Less than 1.
M-Safe	:	Professional use : Fresh water :12.7 kg/day Soil :25.7 kg/day Marine water :9.3 kg/day Human :1.4E4 kg/day End use : Fresh water :1.9 kg/day Soil :154.4 kg/day Marine water :1.9 kg/day Human :8.4E4 kg/day

Contributing scenario : Wide dispersive outdoor use of reactive substances in open systems - Exposure estimation and reference to its source -Environment:

Exposure assessment (environment):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/PNEC): Less than 1.
M-Safe	:	Professional use : Fresh water :12.7 kg/day Soil :25.7 kg/day Marine water :9.3 kg/day Human :1.4E4 kg/day End use : Fresh water :43.2 kg/day Soil :154.4 kg/day Marine water :36.0 kg/day Human :8.4E4 kg/day

Contributing scenario : Wide dispersive outdoor use resulting in inclusion into or onto a matrix - Exposure estimation and reference to its source -Environment:

Exposure assessment (environment):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/PNEC): Less than 1.
M-Safe	:	Professional use : Fresh water :87.1 kg/day Soil:422.5 kg/day Marine water :80.4 kg/day Human :4.1E5 kg/day

Contributing scenario : Wide dispersive indoor use of substances in closed systems - Exposure estimation and reference to its source -Environment:

Exposure assessment (environment):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/PNEC): Less than 1.
M-Safe	:	Professional use : Fresh water :12.7 kg/day Soil :25.7 kg/day Marine water :9.3 kg/day Human :1.4E4 kg/day End use : Fresh water :76.2 kg/day Soil :154.4 kg/day Marine water :56.2 kg/day Human :8.4E4 kg/day

Contributing scenario : Wide dispersive outdoor use of substances in closed systems - Exposure estimation and reference to its source -Environment:

Exposure assessment (environment):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/PNEC): Less than 1.
M-Safe	:	Professional use : Fresh water :12.7 kg/day Soil :21.5 kg/day Marine water :9.4 kg/day Human :1.4E4 kg/day End use : Fresh water :26.2 kg/day Soil :154.4 kg/day Marine water :23.4kg/day Human :8.4E4 kg/day

Contributing scenario : Wide dispersive indoor use of processing aids in open systems - Exposure estimation and reference to its source -Environment:

Exposure assessment (environment):	:	A tier approach is used under Easy-TRA for the RCR calculation. All the use descriptors enumerated above results in safe uses.
Exposure estimation	:	Exposures are low and do not exceed limit values. Risk characterisation ratio (PEC/PNEC): Less than 1.
M-Safe	:	Professional use : Fresh water :12.0 kg/day Soil :25.4 kg/day Marine water :9.0 kg/day Human :1.4E4 End use : Fresh water :1.9 kg/day Soil :154.4 kg/day Marine water :1.9 kg/day Human :8.4E4 kg/day

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	:	Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Health	:	Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.