According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

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

#### 1.1 Product identifier

Trade name : ShellSol A100 Low Cumene

Product code : Q7591

Registration number EU : 01-2119455851-35-0000 Synonyms : Hydrocarbons, C9, aromatics

EC-No. : 918-668-5

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

Use of the Sub- : Industrial Solvent.

stance/Mixture Please refer to section 16 and/or the annexes for the regis-

tered uses under REACH.

Uses advised against : This product must not be used in applications other than the

above without first seeking the advice of the supplier.

#### 1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier : Shell Chemicals Europe B.V.

PO Box 2334

3000 CH Rotterdam

Netherlands

Telephone : +31 (0)10 441 5137 / +31 (0)10 441 5191 Telefax : +31 (0)20 716 8316 / +31 (0)20 713 9230

Contact for Safety Data : sccmsds@shell.com

Sheet

#### 1.4 Emergency telephone number

+44 (0) 1235 239 670 (This telephone number is available 24 hours per day, 7 days per

week)

Poison Centre Information (CIAV): 800 250 250

Other information : SHELLSOL is a trademark owned by Shell Trademark Man-

agement B.V. and Shell Brands Inc. and used by affiliates of

Shell plc.

#### **SECTION 2: Hazards identification**

#### 2.1 Classification of the substance or mixture

#### Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3 H226: Flammable liquid and vapour.

Aspiration hazard, Category 1 H304: May be fatal if swallowed and enters air-

ways.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Specific target organ toxicity - single exposure, Category 3, Respiratory Tract

H335: May cause respiratory irritation.

Specific target organ toxicity - single exposure, Category 3, Narcotic effects

H336: May cause drowsiness or dizziness.

Long-term (chronic) aquatic hazard, Category 2

H411: Toxic to aquatic life with long lasting effects.

#### 2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms







Signal word : Danger

Hazard statements : PHYSICAL HAZARDS:

H226 Flammable liquid and vapour.

**HEALTH HAZARDS:** 

H304 May be fatal if swallowed and enters airways.

H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
ENVIRONMENTAL HAZARDS:

H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard

Statements

EUH066

Repeated exposure may cause skin dryness or

cracking.

Precautionary statements : Prevention:

P210 Keep away from heat, hot surfaces, sparks, open

flames and other ignition sources. No smoking. P243 Take action to prevent static discharges.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

Storage:

No precautionary phrases.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### 2.3 Other hazards

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

May form flammable/explosive vapour-air mixture.

This material is a static accumulator.

Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.

If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

Possibility of organ or organ system damage from prolonged exposure; see Section 11 for details. Target organ(s):

Auditory system

## **SECTION 3: Composition/information on ingredients**

## 3.1 Substances

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
	EC-No.	
Hydrocarbons, C9, aromat-	Not Assigned	<= 100
ics	918-668-5	

#### **Further information**

## Contains:

Chemical name	Identification number	Classification	Concentration (% w/w)
Cumene	98-82-8, 202-704-5	Flam. Liq.3; H226 Asp. Tox.1; H304 STOT SE3; H335 Carc.1B; H350 Aquatic Chronic2; H411	>= 0 - <= 0,099
Benzene	71-43-2, 200-753-7	Flam. Liq.2; H225 Asp. Tox.1; H304 Skin Irrit.2; H315 Eye Irrit.2; H319 Muta.1B; H340 Carc.1A; H350 STOT RE1; H372 Aquatic Chronic3; H412	>= 0 - < 0,1

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### **SECTION 4: First aid measures**

#### 4.1 Description of first aid measures

General advice : Not expected to be a health hazard when used under normal

conditions.

Protection of first-aiders : When administering first aid, ensure that you are wearing the

appropriate personal protective equipment according to the

incident, injury and surroundings.

If inhaled : Remove to fresh air. If rapid recovery does not occur,

transport to nearest medical facility for additional treatment.

In case of skin contact : Remove contaminated clothing. Immediately flush skin with

large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical

facility for additional treatment.

In case of eye contact : Flush eye with copious quantities of water.

Remove contact lenses, if present and easy to do. Continue

rinsing.

If persistent irritation occurs, obtain medical attention.

If swallowed : Call emergency number for your location / facility.

If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

#### 4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing,

and/or difficulty breathing.

Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and

death.

Skin irritation signs and symptoms may include a burning sen-

sation, redness, or swelling.

No specific hazards under normal use conditions.

Eye irritation signs and symptoms may include a burning sen-

sation, redness, swelling, and/or blurred vision.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.

If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facili-

ty: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

Defatting dermatitis signs and symptoms may include a burn-

ing sensation and/or a dried/cracked appearance.

Auditory system effects may include temporary hearing loss

and/or ringing in the ears.

#### 4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Call a doctor or poison control center for guidance.

Potential for chemical pneumonitis.

Treat symptomatically.

#### **SECTION 5: Firefighting measures**

#### 5.1 Extinguishing media

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon diox-

ide, sand or earth may be used for small fires only.

Unsuitable extinguishing

media

Do not use water in a jet.

#### 5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

Clear fire area of all non-emergency personnel. Hazardous combustion products may include:

A complex mixture of airborne solid and liquid particulates and

gases (smoke). Carbon monoxide.

Unidentified organic and inorganic compounds.

Flammable vapours may be present even at temperatures

below the flash point.

The vapour is heavier than air, spreads along the ground and

distant ignition is possible.

Will float and can be reignited on surface water.

## 5.3 Advice for firefighters

Special protective equipment :

for firefighters

Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to

relevant Standards (e.g. Europe: EN469).

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Specific extinguishing meth-

ods

Standard procedure for chemical fires.

Further information : Keep adjacent containers cool by spraying with water.

#### **SECTION 6: Accidental release measures**

#### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions

Observe all relevant local and international regulations. Notify authorities if any exposure to the general public or the

environment occurs or is likely to occur.

Local authorities should be advised if significant spillages

cannot be contained.

6.1.1 For non emergency personnel: Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

Do not breathe fumes, vapour. Do not operate electrical equipment. 6.1.2 For emergency responders:

Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

Do not breathe fumes, vapour. Do not operate electrical equipment.

#### 6.2 Environmental precautions

Environmental precautions

Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bond-

ing and grounding (earthing) all equipment. Monitor area with combustible gas indicator.

## 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : For small liquid spills (< 1 drum), transfer by mechanical

means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove

contaminated soil and dispose of safely.

For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely

Ventilate contaminated area thoroughly.

If contamination of site occurs remediation may require spe-

cialist advice.

#### 6.4 Reference to other sections

For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet., For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet.

## **SECTION 7: Handling and storage**

#### 7.1 Precautions for safe handling

Technical measures : Avoid breathing of or direct contact with material. Only use in

well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see

Section 8 of this Safety Data Sheet.

Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this

material.

Ensure that all local regulations regarding handling and stor-

age facilities are followed.

Advice on safe handling : Avoid inhaling vapour and/or mists.

Avoid contact with skin, eyes and clothing.

Extinguish any naked flames. Do not smoke. Remove ignition

sources. Avoid sparks.

Use local exhaust ventilation if there is risk of inhalation of

vapours, mists or aerosols.

Bulk storage tanks should be diked (bunded).

When using do not eat or drink.

The vapour is heavier than air, spreads along the ground and

distant ignition is possible.

Product Transfer : Even with proper grounding and bonding, this material can still

accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur. Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges. These include but are not limited to pumping (especially turbulent flow), mixing, filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge ( $\leq 1$  m/s until fill pipe submerged to twice its

diameter, then ≤ 7 m/s). Avoid splash filling. Do NOT use

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

compressed air for filling, discharging, or handling operations.

Refer to guidance under Handling section.

Hygiene measures : Wash hands before eating, drinking, smoking and using the

toilet. Launder contaminated clothing before re-use. Do not ingest. If swallowed, then seek immediate medical assistance.

## 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Refer to section 15 for any additional specific legislation cov-

ering the packaging and storage of this product.

Further information on storage stability

Storage Temperature:

Ambient.

Bulk storage tanks should be diked (bunded).

Locate tanks away from heat and other sources of ignition. Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of

strict procedures and precautions.

Must be stored in a diked (bunded) well- ventilated area, away from sunlight, ignition sources and other sources of heat. Keep away from aerosols, flammables, oxidizing agents, corrosives and from other flammable products which are not

harmful or toxic to man or to the environment.

Electrostatic charges will be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to

reduce the risk.

The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flamma-

ble.

Packaging material : Suitable material: For containers, or container linings use mild

steel, stainless steel., For container paints, use epoxy paint,

zinc silicate paint.

Unsuitable material: Avoid prolonged contact with natural,

butyl or nitrile rubbers.

Container Advice : Do not cut, drill, grind, weld or perform similar operations on or

near containers.

7.3 Specific end use(s)

Specific use(s) : Please refer to section 16 and/or the annexes for the regis-

tered uses under REACH.

See additional references that provide safe handling practices for liquids that are determined to be static accumulators: American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices

on Static Electricity).

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

IEC/TS 60079-32-1: Electrostatic hazards, guidance

# **SECTION 8: Exposure controls/personal protection**

## 8.1 Control parameters

## **Occupational Exposure Limits**

Components	CAS-No.	Value type (Form	Control parameters	Basis
	22.22.2	of exposure)		57.05
Cumene	98-82-8	VLE-MP	50 ppm	PT OEL
			pecific national legislation or	
			ation of the upper respiratory	/ tract, impair-
	ment of centra		ye irritation, Skin irritation	T
Cumene		TWA (inhalable	10 ppm	PT DL
		fraction)	50 mg/m3	305/2007
			n assigned to the occupation of significant uptake through	
Cumene		STEL (inhalable	50 ppm	PT DL
Carrono		fraction)	250 mg/m3	305/2007
	Further inform	,	n assigned to the occupation	
			of significant uptake through	
Cumene		TWA	10 ppm	2019/1831/E
			50 mg/m3	U
	Further inform	ation: A skin notation	n assigned to the occupation	nal exposure
	limit value ind	icates the possibility	of significant uptake through	n the skin., In-
	dicative			
Cumene		STEL	50 ppm	2019/1831/E
			250 mg/m3	U
			n assigned to the occupation	
	limit value indicates the possibility of significant uptake through		n the skin., In-	
	dicative			
Benzene	71-43-2	VLE-MP	0,5 ppm	PT OEL
			sorption by the skin, Substa	nces that are
	confirmed as	being carcinogenic f	or humans.	
Benzene		VLE_CD	2,5 ppm	PT OEL
	Further inform	ation: Danger for ab	sorption by the skin, Substa	nces that are
	confirmed as	being carcinogenic f	or humans.	
Benzene		TWA	1 ppm	PT DL
			3,25 mg/m3	88/2015
	Further inform	nation: Skin		
Benzene		TWA	0,25 ppm	Shell Internal
			0,8 mg/m3	Standard
				(SIS) for 8-12
				hour TWA.
Benzene		STEL	2,5 ppm	Shell Internal
			8 mg/m3	Standard
				(SIS) for 15
				min (STEL)

According to EC No 1907/2006 as amended as at the date of this SDS

## ShellSol A100 Low Cumene

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### **Biological occupational exposure limits**

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Benzene	71-43-2	S- Phenylmercapturic acid: 25 µg/g creat- inine (Urine)	End of shift	PT NP1796
		t,t-Muconic acid: 500 µg/g creatinine (Urine)	End of shift	PT NP1796

#### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
ShellSol A100	Workers	Dermal	Long-term systemic effects	25 mg/kg bw/day
ShellSol A100	Workers	Inhalation	Long-term systemic effects	150 mg/m3
ShellSol A100	Consumers	Inhalation	Long-term systemic effects	32 mg/m3
ShellSol A100	Consumers	Dermal	Long-term systemic effects	11 mg/kg
ShellSol A100	Consumers	Oral	Long-term systemic effects	11 mg/kg

#### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Remarks:	e is a hydrocarbon with a complex, unknown or ventional methods of deriving PNECs are not a	
	ble to identify a single representative PNEC for	

## 8.2 Exposure controls

#### **Engineering measures**

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex. The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:

Use sealed systems as far as possible.

Adequate explosion-proof ventilation to control airborne concentrations below the exposure quidelines/limits.

Local exhaust ventilation is recommended.

Firewater monitors and deluge systems are recommended.

Eye washes and showers for emergency use.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

#### General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

According to EC No 1907/2006 as amended as at the date of this SDS

## ShellSol A100 Low Cumene

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

#### Personal protective equipment

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex. The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Eye protection : If material is handled such that it could be splashed into eyes,

protective eyewear is recommended. Approved to EU Standard EN166.

Hand protection

Remarks : Where hand contact with the product may occur the use of

gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: butyl-

rubber Nitrile rubber gloves.

Incidental contact/Splash protection: Nitrile rubber gloves. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moistur-

izer is recommended.

Skin and body protection : Skin protection is not required under normal conditions of

use.

For prolonged or repeated exposures use impervious clothing

According to EC No 1907/2006 as amended as at the date of this SDS

## ShellSol A100 Low Cumene

Date of last issue: 07.12.2023 Version Revision Date: SDS Number:

1.6 28.03.2024 800010059269 Print Date 04.04.2024

over parts of the body subject to exposure.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Stand-

ard, and provide employee skin care programmes.

Protective clothing approved to EU Standard EN14605.

Wear antistatic and flame-retardant clothing, if a local risk

assessment deems it so.

Respiratory protection If engineering controls do not maintain airborne concentra-

tions to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing appa-

ratus.

Where air-filtering respirators are suitable, select an appro-

priate combination of mask and filter.

If air-filtering respirators are suitable for conditions of use: Select a filter suitable for organic gases and vapours [Type A

boiling point > 65°C (149°F)] meeting EN14387.

#### **SECTION 9: Physical and chemical properties**

#### 9.1 Information on basic physical and chemical properties

Physical state Liquid.

Colour colourless

Odour aromatic

Odour Threshold Data not available

Melting point/freezing point Data not available

Boiling point/boiling range 150 - 185 °C

Flammability

Flammability (solid, gas) Not applicable

Flammability (liquids) Flammable liquid and vapour.

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit : 7 %(V)

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023 1.6 28.03.2024 800010059269 Print Date 04.04.2024

Lower explosion limit /

Lower flammability limit

0,6 %(V)

Flash point : 38 - 50 °C

Method: IP 170

Auto-ignition temperature : 507 °C

Decomposition temperature

Decomposition tempera-

ture

Data not available

pH : Data not available

Viscosity

Viscosity, dynamic : Data not available

Viscosity, kinematic : Typical 0,9 mm2/s (25 °C)

Method: ASTM D445

Solubility(ies)

Water solubility : insoluble

Partition coefficient: n-

octanol/water

log Pow: 3,7 - 4,5

Vapour pressure : 210 - 1.300 Pa (20 °C)

Relative density : 0,87 - 0,88 (20 °C)

Method: ASTM D4052

Density : Typical 876 kg/m3 (15 °C)

Method: ASTM D4052

Relative vapour density : 4,3

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosive properties : Not applicable

Oxidizing properties : Data not available

Flammability (liquids) : Flammable liquid and vapour.

Evaporation rate : < 1

Method: ASTM D 3539, nBuAc=1

Conductivity: < 100 pS/m

According to EC No 1907/2006 as amended as at the date of this SDS

## ShellSol A100 Low Cumene

Date of last issue: 07.12.2023 Version Revision Date: SDS Number:

1.6 28.03.2024 800010059269 Print Date 04.04.2024

> The conductivity of this material makes it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semiconductive if its conductivity is below 10,000 pS/m., Whether a liquid is nonconductive or semi-conductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives

can greatly influence the conductivity of a liquid

Surface tension Data not available

Molecular weight Data not available

## **SECTION 10: Stability and reactivity**

#### 10.1 Reactivity

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

#### 10.2 Chemical stability

No hazardous reaction is expected when handled and stored according to provisions Stable under normal conditions of use.

#### 10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

#### 10.4 Conditions to avoid

Conditions to avoid Avoid heat, sparks, open flames and other ignition sources.

In certain circumstances product can ignite due to static elec-

tricity.

#### 10.5 Incompatible materials

Materials to avoid Strong oxidising agents.

#### 10.6 Hazardous decomposition products

Hazardous decomposition products are not expected to form during normal storage. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

#### **SECTION 11: Toxicological information**

#### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

exposure

Information on likely routes of : Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

## **Acute toxicity**

#### **Components:**

Hydrocarbons, C9, aromatics:

Acute oral toxicity : LD 50 (Rat, male and female): > 2000 - <= 5000

Method: Acceptable non-standard method. Remarks: May be harmful if swallowed.

Acute inhalation toxicity : LC 50 (Rat, male and female): > 2 -<= 10 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Method: Test(s) equivalent or similar to OECD Test Guideline

403

Remarks: LC50 greater than near-saturated vapour concen-

tration.

Based on available data, the classification criteria are not met.

Acute dermal toxicity : LD 50 (Rabbit, male and female): > 2.000 mg/kg

Method: Test(s) equivalent or similar to OECD Test Guideline

402

Remarks: Based on available data, the classification criteria

are not met.

#### Skin corrosion/irritation

## **Components:**

## Hydrocarbons, C9, aromatics:

Species : Rabbit

Method : OECD Test Guideline 404

Remarks : Moderately irritating to skin (but insufficient to classify).

Repeated exposure may cause skin dryness or cracking.

#### Serious eye damage/eye irritation

## **Components:**

#### Hydrocarbons, C9, aromatics:

Species : Rabbit

Method : Test(s) equivalent or similar to OECD Test Guideline 405

Remarks : Slightly irritating.

Insufficient to classify.

## Respiratory or skin sensitisation

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Species : Guinea pig

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Method : OECD Test Guideline 406

Remarks : Based on available data, the classification criteria are not met.

#### Germ cell mutagenicity

#### **Components:**

## Hydrocarbons, C9, aromatics:

Genotoxicity in vitro : Method: Test(s) equivalent or similar to OECD Guideline 471

Remarks: Based on available data, the classification criteria

are not met.

Method: Test(s) equivalent or similar to OECD Test Guideline

473

Remarks: Based on available data, the classification criteria

are not met.

Method: Test(s) equivalent or similar to OECD Test Guideline

476

Remarks: Based on available data, the classification criteria

are not met.

Genotoxicity in vivo : Species: Rat

Method: Test(s) equivalent or similar to OECD Test Guideline

475

Remarks: Based on available data, the classification criteria

are not met.

Germ cell mutagenicity- As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

#### Carcinogenicity

## **Components:**

## Hydrocarbons, C9, aromatics:

Remarks : Tumours produced in animals are not considered relevant to

humans.

Not a carcinogen.

Based on available data, the classification criteria are not met.

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
Hydrocarbons, C9, aromatics	No carcinogenicity classification.
Cumene	Carcinogenicity Category 1B
Benzene	Carcinogenicity Category 1A

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Material	Other Carcinogenicity Classification
Cumene	IARC: Group 2B: Possibly carcinogenic to humans
Benzene	IARC: Group 1: Carcinogenic to humans

#### Reproductive toxicity

## **Components:**

#### Hydrocarbons, C9, aromatics:

Effects on fertility : Species: Rat

Sex: male and female Application Route: Inhalation

Method: Other guideline method.

Remarks: Based on available data, the classification criteria

are not met.

Reproductive toxicity - As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

## STOT - single exposure

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Exposure routes : Inhalation

Target Organs : Lungs, Central nervous system
Remarks : May cause drowsiness and dizziness.

May cause respiratory irritation.

#### STOT - repeated exposure

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Remarks : Based on available data, the classification criteria are not met.

Auditory system: prolonged and repeated exposures to high

concentrations have resulted in hearing loss in rats. Kidney: caused kidney effects in male rats which are not con-

sidered relevant to humans

#### Repeated dose toxicity

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Species : Rat, male and female

Application Route : Oral

Method : Test(s) equivalent or similar to OECD Test Guideline 408

Target Organs : No specific target organs noted

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Species : Rat, male and female

Application Route : Inhalation Test atmosphere : vapour

Method : Test(s) equivalent or similar to OECD Test Guideline 452

Target Organs : No specific target organs noted

#### **Aspiration toxicity**

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

#### 11.2 Information on other hazards

#### **Endocrine disrupting properties**

#### **Product:**

Assessment : The substance/mixture does not contain components consid-

ered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

levels of 0.1% or higher.

#### **Further information**

**Product:** 

Remarks : Unless indicated otherwise, the data presented is representa-

tive of the product as a whole, rather than for individual com-

ponent(s).

#### **Components:**

## Hydrocarbons, C9, aromatics:

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

## **SECTION 12: Ecological information**

#### 12.1 Toxicity

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 9,2 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Remarks: Toxic

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

LC/EC/IC50 > 1 - <=10 mg/l

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): 3,2 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Remarks: Toxic

LC/EC/IC50 > 1 - <=10 mg/l

Toxicity to algae/aquatic plants : ErL50 (Pseudokirchneriella subcapitata (algae)): 2,9 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Toxic

LC/EC/IC50 >1 - <=10 mg/l

Toxicity to microorganisms : NOEC (Activated sludge): > 99 mg/l

Exposure time: 0,16 h

Method: OECD Test Guideline 209 Remarks: Practically non toxic: LC/EC/IC50 > 100 mg/l

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

Remarks: Data not available

#### 12.2 Persistence and degradability

#### **Components:**

Hydrocarbons, C9, aromatics:

Biodegradability : Biodegradation: 78 %

Exposure time: 28 d

Method: OECD Test Guideline 301F Remarks: Readily biodegradable.

Oxidises rapidly by photo-chemical reactions in air.

## 12.3 Bioaccumulative potential

#### **Components:**

Hydrocarbons, C9, aromatics:

Bioaccumulation : Remarks: Contains components with the potential to bioaccumulate.

## 12.4 Mobility in soil

## **Components:**

Hydrocarbons, C9, aromatics:

Mobility : Remarks: Floats on water., If it enters soil, it will adsorb to soil

particles and will not be mobile.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### 12.5 Results of PBT and vPvB assessment

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Assessment : The substance does not fulfill all screening criteria for persis-

tence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB..

## 12.6 Endocrine disrupting properties

#### **Product:**

Assessment : The substance/mixture does not contain components considered to

have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### 12.7 Other adverse effects

#### **Product:**

Additional ecological infor-

mation

: Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

#### **Components:**

#### Hydrocarbons, C9, aromatics:

Additional ecological infor-

mation

: Does not have ozone depletion potential.

## **SECTION 13: Disposal considerations**

## 13.1 Waste treatment methods

Product : Recover or recycle if possible.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal meth-

ods in compliance with applicable regulations.

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.

Do not dispose into the environment, in drains or in water courses

ourses.

Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater

contamination.

Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023 1.6 28.03.2024 800010059269 Print Date 04.04.2024

Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional,

national, and local laws and regulations.

Local regulations may be more stringent than regional or na-

tional requirements and must be complied with.

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides tech-

nical aspects at controlling pollutions from ships.

Contaminated packaging : Drain container thoroughly.

After draining, vent in a safe place away from sparks and fire.

Residues may cause an explosion hazard. Do not puncture,

cut or weld uncleaned drums.

Send to drum recoverer or metal reclaimer.

Comply with any local recovery or waste disposal regulations.

## **SECTION 14: Transport information**

#### 14.1 UN number or ID number

ADR : 1268 RID : 1268 IMDG : 1268 IATA : 1268

## 14.2 UN proper shipping name

ADR : PETROLEUM DISTILLATES, N.O.S.

RID : PETROLEUM DISTILLATES, N.O.S.

IMDG : PETROLEUM DISTILLATES, N.O.S.

(NAPHTHA)

IATA : Petroleum distillates, n.o.s.

#### 14.3 Transport hazard class(es)

ADR : 3
RID : 3
IMDG : 3
IATA : 3

## 14.4 Packing group

**ADR** 

Packing group : III Classification Code : F1

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Hazard Identification Number : 30 Labels : 3

RID

Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

**IMDG** 

Packing group : III Labels : 3

IATA

Packing group : III Labels : 3

#### 14.5 Environmental hazards

**ADR** 

Environmentally hazardous : yes

**RID** 

Environmentally hazardous : yes

**IMDG** 

Marine pollutant : yes

14.6 Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage,

for special precautions which a user needs to be aware of or

needs to comply with in connection with transport.

#### 14.7 Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

**Additional Information**: This product may be transported under nitrogen blanketing.

Nitrogen is an odourless and invisible gas. Exposure to nitrogen may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined

space entry.

## **SECTION 15: Regulatory information**

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) Conditions of restriction for the following entries should be considered: Cumene (Number on list 28)
Benzene (Number on list 72, 5, 29,

28)

REACH - Candidate List of Substances of Very High : This product does not contain sub-

According to EC No 1907/2006 as amended as at the date of this SDS

## ShellSol A100 Low Cumene

Date of last issue: 07.12.2023 Version Revision Date: SDS Number:

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Concern for Authorisation (Article 59). stances of very high concern (Regu-

P5c

lation (EC) No 1907/2006 (REACH),

Article 57).

REACH - List of substances subject to authorisation Product is not subject to Authorisa-

tion under REACH. (Annex XIV)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving

dangerous substances.

E2 **ENVIRONMENTAL HAZARDS** 

FLAMMABLE LIQUIDS

#### Other regulations:

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Product is subject to Decree Law No 150/2015 of 5 August 2015 that transposes Seveso III directive (2012/18/EU) into national law and establishes the system for the prevention and control of serious accidents involving dangerous substances and the limitation of their consequences for human health and the environment.

The national inventory is based on the CAS number 64742-95-6.

### The components of this product are reported in the following inventories:

DSL : Listed

**IECSC** Listed

**TSCA** Listed

KECI Listed

**PICCS** Listed

**TCSI** Listed

**AIIC** Listed

**NZIoC** Listed

#### 15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### **SECTION 16: Other information**

#### Full text of other abbreviations

2019/1831/EU : Europe. Commission Directive 2019/1831/EU establishing a

fifth list of indicative occupational exposure limit values

PT DL 305/2007 : Portugal. Indicative Occupational Exposure Limits
PT DL 88/2015 : Portugal. Binding Occupational Exposure Limits
PT NP1796 : Portuguese Norm 1796 - Biological Exposure Indices

PT OEL : Portugal. Security and Health at the Workplace - Occupational

exposure limits of chemical agents

2019/1831/EU / TWA : Limit Value - eight hours 2019/1831/EU / STEL : Short term exposure limit

PT DL 305/2007 / TWA : 8 Hour limit value
PT DL 305/2007 / STEL : Short term limit value
PT DL 88/2015 / TWA : 8-Hour limit value
PT OEL / VLE-MP : Time Weighted Average
PT OEL / VLE\_CD : Short Term Exposure Limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA -European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI -Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### **Further information**

Training advice : Provide adequate information, instruction and training for op-

erators.

Other information : For Industry guidance and tools on REACH please visit the

CEFIC website at http://cefic.org/Industry-support.

The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB.

A vertical bar (|) in the left margin indicates an amendment

from the previous version.

This product is classified as H304 (May be fatal if swallowed and enters airways). The risk relates to potential for aspiration. The risk arising from aspiration hazard is solely related to the physico-chemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific hazard and included within Section 8 of the SDS. An exposure scenario is not presented.

This product is classified as R66 / EUH066 (Repeated exposure may cause skin dryness or cracking). The risk relates to the potential for repeated or prolonged dermal contact. The risk arising from contact is solely related to the physicochemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific hazard and included within Section 8 of the SDS. An exposure scenario is not presented.

Sources of key data used to compile the Safety Data Sheet

The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU

IUCLID date base, EC 1272 regulation, etc).

# Identified Uses according to the Use Descriptor System

Uses - Worker

Title

Manufacture of substance

- Industrial

**Uses - Worker** 

Title : Distribution of substance

- Industrial

**Uses - Worker** 

Title : Formulation & (re)packing of substances and mixtures

- Industrial

**Uses - Worker** 

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Title : Uses in Coatings

- Industrial

**Uses - Worker** 

Title : Use in Cleaning Agents

- Industrial

**Uses - Worker** 

Title : Uses in Coatings

- Professional

**Uses - Worker** 

Title : Use in Cleaning Agents

- Professional

**Uses - Worker** 

Title : Use in Oil and Gas field drilling and production operations

- Industrial

**Uses - Worker** 

Title : Lubricants

- Industrial

**Uses - Worker** 

Title : Lubricants

- Professional

Low Environmental Release

**Uses - Worker** 

Title : Lubricants

- Professional

High Environmental Release

**Uses - Worker** 

Title : Metal working fluids / rolling oils

- Industrial

Uses - Worker

Title : Metal working fluids / rolling oils

- Professional

**Uses - Worker** 

Title : Use as binders and release agents

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 07.12.2023

 1.6
 28.03.2024
 800010059269
 Print Date 04.04.2024

- Industrial

**Uses - Worker** 

Title : Use as binders and release agents

- Professional

**Uses - Worker** 

Title : Use in Agrochemicals uses

- Professional

**Uses - Worker** 

Title : Use as a fuel

- Industrial

**Uses - Worker** 

Title : Use as a fuel

- Professional

**Uses - Worker** 

Title : Functional Fluids

- Professional

**Uses - Worker** 

Title : Functional Fluids

- Industrial

**Uses - Worker** 

Title : Road and construction applications

- Professional

Uses - Worker

Title : Use in laboratories

- Industrial

**Uses - Worker** 

Title : Use in laboratories

- Professional

**Uses - Worker** 

Title : Water treatment chemicals

- Industrial

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Uses - Worker** 

Title : Water treatment chemicals

- Professional

Identified Uses according to the Use Descriptor System

**Uses - Consumer** 

Title : Functional Fluids

- Consumer

**Uses - Consumer** 

Title : Use as a fuel

- Consumer

**Uses - Consumer** 

Title : Use in Agrochemicals uses

- Consumer

**Uses - Consumer** 

Title : Lubricants

- Consumer

High Environmental Release

**Uses - Consumer** 

Title : Lubricants

- Consumer

Low Environmental Release

**Uses - Consumer** 

Title : Use in Cleaning Agents

- Consumer

**Uses - Consumer** 

Title : Uses in Coatings

- Consumer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

PT / EN

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Worker** 

30000000750	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Manufacture of substance- Industrial
Use Descriptor	Sector of Use: SU3, SU8, SU9 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15 Environmental Release Categories: ERC1, ERC4, ESVOC SpERC 1.1.v1
Scope of process	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.

SECTION 2	OPERATIONAL CONDITIONS AND RIS MEASURES	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STF	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of	Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

**Contributing Scenarios Risk Management Measures** General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 General exposures (open sys-No other specific measures identified. tems)PROC4 Process samplingPROC8b No other specific measures identified. Laboratory activitiesPROC15 No other specific measures identified. No other specific measures identified. Bulk transfers(open systems)PROC8b Bulk transfers(closed sys-No other specific measures identified. tems)PROC8b Equipment cleaning and No other specific measures identified. maintenancePROC8a Storage.PROC1PROC2 Store substance within a closed system. Section 2.2 **Control of Environmental Exposure** 

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According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

	I
Substance is complex UVCB.	
Predominantly hydrophobic.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	2,4E+04
Fraction of Regional tonnage used locally:	1
Annual site tonnage (tonnes/year):	2,4E+04
Maximum daily site tonnage (kg/day):	7,9E+04
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	000
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	100
Release fraction to air from process (initial release prior to RMM):	1,0E-02
Release fraction to wastewater from process (initial release prior to	3,0E-04
RMM):	ŕ
Release fraction to soil from process (initial release prior to RMM):	1,0E-04
Technical conditions and measures at process level (source) to pro	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit discha-	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	15,9
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	33,0
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	00,0
Maximum allowable site tonnage (MSafe) based on release following	1,0E+06
total wastewater treatment removal (kg/d)	1,00100
Assumed domestic sewage treatment plant flow (m3/d)	1,0E+04
Conditions and Measures related to external treatment of waste for	
During manufacturing no waste of the substance is generated.	αιορυσαι
Conditions and massures related to systemal resources of weeks	
Conditions and measures related to external recovery of waste	

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

During manufacturing no waste of the substance is generated.

## SECTION 3 EXPOSURE ESTIMATION

#### Section 3.1 - Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

# SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Worker** 

Exposure coeriano Troi	
30000000753	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Distribution of substance- Industrial
Use Descriptor	Sector of Use: SU3, SU8, SU9
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4,
	PROC 8a, PROC 8b, PROC 9, PROC 15
	Environmental Release Categories: ERC1, ERC2, ERC3,
	ERC4, ERC5, ERC6a, ERC6b, ERC 6C,, ERC7, ESVOC
	SpERC 1.1b.v1
Scope of process	Loading (including marine vessel/barge, rail/road car and IBC
	loading) and repacking (including drums and small packs) of
	substance, including its sampling, storage, unloading distribu-
	tion and associated laboratory activities.
	is. and described land. and, y don't history
	1

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of	Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Condition	ons affecting Exposure	
	an 20°C above ambient temperature (unless stated differently). lard of occupational hygiene is implemented.	

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Risk Management Measures
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified. 3
General exposures (open systems)PROC4	No other specific measures identified.
Process samplingPROC3	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Bulk transfers(closed systems)PROC8b	No other specific measures identified.
Bulk transfers(open systems)PROC8b	No other specific measures identified.
Drum and small package fill-ingPROC9	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
	in region:	0,1
Fraction of EU tonnage used in region:  Regional use tonnage (tonnes/year):		850
Fraction of Regional tonnage used locally:		2,0E-03
		1,7
Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):		85
Frequency and Duration of		00
Continuous release.	036	
Emission Days (days/year):		20
	influenced by risk management	20
Local freshwater dilution fact		10
Local freshwater dilution fact Local marine water dilution fa	-	100
	ons affecting Environmental Exposure	100
		1 05 02
	process (initial release prior to RMM):	1,0E-03 1,0E-05
Release fraction to wastewater from process (initial release prior to RMM):		,
Release fraction to soil from	process (initial release prior to RMM):	1,0E-05
	neasures at process level (source) to pr	event release
	ss sites thus conservative process re-	
lease estimates used.		
Technical onsite condition	s and measures to reduce or limit disch	arges, air emis-
Technical onsite condition sions and releases to soil		arges, air emis-
Technical onsite condition sions and releases to soil Risk from environmental exp	osure is driven by freshwater.	arges, air emis-
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso		arges, air emis-
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undissowastewater.	osure is driven by freshwater. olved substance to or recover from onsite	arges, air emis-
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment recommenders.	osure is driven by freshwater. blved substance to or recover from onsite	
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater. No wastewater treatment rec Treat air emission to provide	osure is driven by freshwater. blved substance to or recover from onsite juired. a typical removal efficiency of (%)	90
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment recorded air emission to provide Treat onsite wastewater (price to the provide to t	osure is driven by freshwater. blved substance to or recover from onsite quired. a typical removal efficiency of (%) or to receiving water discharge) to provide	
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment reconstruction to provide Treat onsite wastewater (prict the required removal efficien	osure is driven by freshwater.  olved substance to or recover from onsite  quired.  a typical removal efficiency of (%)  or to receiving water discharge) to provide  cy of >= (%)	90
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prio the required removal efficien If discharging to domestic se	osure is driven by freshwater.  olved substance to or recover from onsite  quired.  a typical removal efficiency of (%)  or to receiving water discharge) to provide cy of >= (%)  wage treatment plant, no secondary	90
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prior the required removal efficien If discharging to domestic se wastewater treatment required.	osure is driven by freshwater. olved substance to or recover from onsite  quired. a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed.	90
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater. No wastewater treatment recomment air emission to provide Treat air emission to provide the required removal efficien If discharging to domestic sewastewater treatment require Organisational measures to	osure is driven by freshwater.  olved substance to or recover from onsite  quired. a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed. o prevent/limit release from site	90
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment recomment air emission to provide Treat air emission to provide the required removal efficient of discharging to domestic sewastewater treatment required organisational measures to not apply industrial sludgers.	osure is driven by freshwater.  olved substance to or recover from onsite  quired. a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed. o prevent/limit release from site e to natural soils.	90
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prior the required removal efficien If discharging to domestic se wastewater treatment required.	osure is driven by freshwater.  olved substance to or recover from onsite  quired. a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed. o prevent/limit release from site e to natural soils.	90
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater. No wastewater treatment rec Treat air emission to provide Treat onsite wastewater (prior the required removal efficien lf discharging to domestic se wastewater treatment require Organisational measures to not apply industrial sludge Sludge should be incinerated.	osure is driven by freshwater.  olived substance to or recover from onsite  quired.  a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed. o prevent/limit release from site e to natural soils. d, contained or reclaimed.	90 0
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment reconsite air emission to provide Treat air emission to provide Treat onsite wastewater (prior the required removal efficien If discharging to domestic se wastewater treatment require Organisational measures to Do not apply industrial sludg Sludge should be incinerated Conditions and Measures I	osure is driven by freshwater.  olved substance to or recover from onsite  quired. a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed. o prevent/limit release from site e to natural soils.	90 0 0
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment recomment air emission to provide Treat air emission to provide Treat onsite wastewater (prior the required removal efficient of discharging to domestic se wastewater treatment required to not apply industrial sludges Sludge should be incinerated Conditions and Measures in Estimated substance removes	osure is driven by freshwater.  olived substance to or recover from onsite  quired. a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed. o prevent/limit release from site e to natural soils. d, contained or reclaimed.  related to municipal sewage treatment p	90 0
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment recomment air emission to provide Treat air emission to provide Treat onsite wastewater (prior the required removal efficient of discharging to domestic sewastewater treatment required to not apply industrial sludge Sludge should be incinerated Conditions and Measures (Conditions and Measures (Stimated substance removated)	osure is driven by freshwater.  olived substance to or recover from onsite  quired. a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed. o prevent/limit release from site e to natural soils. d, contained or reclaimed.  related to municipal sewage treatment p all from wastewater via domestic sewage	90 0 0
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater. No wastewater treatment recomment air emission to provide Treat air emission to provide the required removal efficient of discharging to domestic sewastewater treatment required to provide the required removal efficient of discharging to domestic sewastewater treatment required to provide the required removal efficient of the provided to	osure is driven by freshwater.  olived substance to or recover from onsite  puired. a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed. o prevent/limit release from site e to natural soils. d, contained or reclaimed.  related to municipal sewage treatment p al from wastewater via domestic sewage om wastewater after onsite and offsite	90 0 0
Technical onsite condition sions and releases to soil Risk from environmental experevent discharge of undisson wastewater.  No wastewater treatment recomment air emission to provide Treat air emission to provide the required removal efficient of discharging to domestic sewastewater treatment required organisational measures to not apply industrial sludge Sludge should be incinerated Conditions and Measures of Estimated substance removate treatment (%)  Total efficiency of removal from the condition of the condi	osure is driven by freshwater.  olived substance to or recover from onsite  quired. a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed. o prevent/limit release from site e to natural soils. d, contained or reclaimed.  related to municipal sewage treatment p all from wastewater via domestic sewage om wastewater after onsite and offsite MMs (%)	90 0 0 0
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment recomment air emission to provide Treat air emission to provide the required removal efficient of discharging to domestic sewastewater treatment required organisational measures to Do not apply industrial sludge Sludge should be incinerated Estimated substance removative atment (%)  Total efficiency of removal front (domestic treatment plant) Residence in the soil of the	osure is driven by freshwater.  olived substance to or recover from onsite  puired.  a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed.  o prevent/limit release from site e to natural soils. d, contained or reclaimed.  related to municipal sewage treatment p all from wastewater via domestic sewage om wastewater after onsite and offsite MMs (%) hage (MSafe) based on release following	90 0 0
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment reconsite air emission to provide Treat air emission to provide Treat onsite wastewater (prior the required removal efficient of discharging to domestic se wastewater treatment require to provide Organisational measures to Do not apply industrial sludge Sludge should be incinerated Conditions and Measures (Estimated substance removate treatment (%)  Total efficiency of removal from the conditions allowable site ton total wastewater treatment restricted to soil wastewater treatment restricted t	osure is driven by freshwater.  olived substance to or recover from onsite  puired.  a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed. o prevent/limit release from site e to natural soils. d, contained or reclaimed.  related to municipal sewage treatment p al from wastewater via domestic sewage om wastewater after onsite and offsite MMs (%) lage (MSafe) based on release following emoval (kg/d)	90 0 0 0 lant 93,6 93,6 2,1E+05
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment recomment air emission to provide Treat air emission to provide Treat onsite wastewater (prior the required removal efficient of discharging to domestic sewastewater treatment required Treatment (Soil Total efficiency of removal from the ficiency of removal from the ficiency of treatment reatment	osure is driven by freshwater.  olived substance to or recover from onsite puired.  a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed. or prevent/limit release from site er to natural soils. d, contained or reclaimed.  related to municipal sewage treatment provided and offsite mastewater after onsite and offsite mastewater after onsite and offsite mastewater plant flow (m3/d) reatment plant flow (m3/d)	90 0 0 0 lant 93,6 93,6 2,1E+05 2,0E+03
Technical onsite condition sions and releases to soil Risk from environmental exp Prevent discharge of undisso wastewater.  No wastewater treatment recomment air emission to provide Treat air emission to provide Treat onsite wastewater (prior the required removal efficient of discharging to domestic sewastewater treatment required Treatment and Treatment (%)  Total efficiency of removal from the Treatment reatment	osure is driven by freshwater.  olived substance to or recover from onsite  puired.  a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary ed. o prevent/limit release from site e to natural soils. d, contained or reclaimed.  related to municipal sewage treatment p al from wastewater via domestic sewage om wastewater after onsite and offsite MMs (%) lage (MSafe) based on release following emoval (kg/d)	90 0 0 0 lant 93,6 93,6 2,1E+05 2,0E+03 r disposal

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

## SECTION 3 EXPOSURE ESTIMATION

#### Section 3.1 - Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

## Section 4.2 - Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### **Exposure Scenario - Worker**

30000000754		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Formulation & (re)packing of substances and mixtures- Industrial	
Use Descriptor	Sector of Use: SU3, SU10 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 14, PROC 15 Environmental Release Categories: ERC2, ESVOC SpERC 2.2.v1	
Scope of process	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.	

OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Control of Worker Exposure		
Liquid, vapour pressure < 0.5 kPa at STP		
Covers use of substance/product up to 100% (unless stated differently).,		
Use		
Covers daily exposures up to 8 hours (unless stated differently).		
ns affecting Exposure		
an 20°C above ambient temperature (unless stated differently).		

Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.

**Contributing Scenarios Risk Management Measures** General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 General exposures (open sys-No other specific measures identified. tems)PROC4 Batch processes at elevated No other specific measures identified. temperaturesOperation is carried out at elevated temperature (> 20°C above ambient temperature). Use in contained batch processesPROC3 Process samplingPROC3 No other specific measures identified. Laboratory activitiesPROC15 No other specific measures identified. Bulk transfersPROC8b No other specific measures identified.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Mixing operations (open systems)PROC5	No other specific measures identified	d.
ManualTransfer from/pouring from containersPROC8a	No other specific measures identified	d.
Drum/batch transfersPROC8b	No other specific measures identified	d.
Production or preparation or articles by tabletting, compression, extrusion or pelletisationPROC14	No other specific measures identified	d.
Drum and small package fill- ingPROC9	No other specific measures identified	d.
Equipment cleaning and maintenancePROC8a	No other specific measures identified	d.
Storage.PROC1PROC2	Store substance within a closed syst	em.
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.	•	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in	region:	0,1
Regional use tonnage (tonnes		730
Fraction of Regional tonnage u	ised locally.	1
Annual site tonnage (tonnes/ye	ear):	730
Maximum daily site tonnage (k	ra/day):	7,3E+03
Frequency and Duration of U	lso	7,02100
Continuous release.	730	
Emission Days (days/year):		100
	fluenced by risk management	100
Local freshwater dilution factor		10
Local marine water dilution factor		100
	s affecting Environmental Exposure	100
	ocess (after typical onsite RMMs con-	1,0E-02
sistent with EU Solvent Emissi	one Directive requirements):	1,01-02
	r from process (initial release prior to	2,0E-04
RMM):	Thom process (initial release prior to	2,02 04
,	rocess (initial release prior to RMM):	1,0E-04
	easures at process level (source) to pro-	
	s sites thus conservative process re-	
lease estimates used.	, c., c., c., c., c., c., c., c., c., c.	
	and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		a. g.o., a o
	sure is driven by freshwater sediment.	
	ved substance to or recover from onsite	
wastewater.		
No wastewater treatment requ	ired.	
Treat air emission to provide a typical removal efficiency of (%)		0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)		0
ii discharging to domestic sew	age treatment plant, no secondary	0

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	3,1E+05
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

#### Section 3.2 -Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO
Section 4.1 - Health	

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 - Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

(http://cefic.org).

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Worker** 

30000000755	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 14, PROC 15 Environmental Release Categories: ERC4, ESVOC SpERC 4.3a.v1
Scope of process	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, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics	•	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Sub-	Covers use of substance/product up to 100% (unless stated	
stance in Mixture/Article	differently).,	
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Conditio	ns affecting Exposure	
Assumes use at not more that	an 20°C above ambient temperature (unless stated differently).	
Assumes a good basic standard of occupational hygiene is implemented.		
Contributing Scenarios	Risk Management Measures	
General exposures (closed	No other specific measures identified.	
systems)PROC1		
General exposures (closed	No other specific measures identified.	
systems) with sample col-		
lectionUse in contained		
systemsPROC2		
Film formation - force dry-	No other specific measures identified.	
ing, stoving and other tech-		
nologies.(closed sys-		
tems)Operation is carried		
out at elevated temperature		
(> 20°C above ambient		
temperature).PROC2		
Mixing operations (closed	No other specific measures identified.	
systems)General expo-		

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

sures (closed sys-		
tems)PROC3		
Film formation - air dry- ingPROC4	No other specific measures identified.	
Preparation of material for	No other specific measures identified.	
applicationMixing opera-		
tions (open sys-		
tems)PROC5		
Spraying (automat- ic/robotic)PROC7	Carry out in a vented booth provided with laminar airflow.	
ManualSprayingPROC7	Wear a respirator conforming to EN140 with Type A filter or better.	
Material transfersNon- dedicated facilityPROC8a	No other specific measures identified.	
Material transfersDedicated facilityPROC8b	No other specific measures identified.	
Roller, spreader, flow applicationPROC10	No other specific measures identified.	
Dipping, immersion and pouringPROC13	No other specific measures identified.	
Laboratory activi- tiesPROC15	No other specific measures identified.	
Material trans-	No other specific measures identified.	
fersDrum/batch transfer-	•	
sTransfer from/pouring from		
containersPROC9		
Production or preparation	No other specific measures identified.	
or articles by tabletting,		
compression, extrusion or		
pelletisationPROC14		
Equipment cleaning and maintenancePROC8a	No other specific measures identified.	
Storage.PROC1	Store substance within a closed system.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		1
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne		7,6E+03
Fraction of Regional tonnage	•	1
Annual site tonnage (tonnes/		7,6E+03
Maximum daily site tonnage (		2,5E+04
Frequency and Duration of		1 =, • = · • ·
Continuous release.		
Emission Days (days/year):		300
	nfluenced by risk management	550
Local freshwater dilution factor: 10		10
Local marine water dilution fa		100
Local manife water unution factor.		1.50

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Release fraction to air from process (initial release prior to RMM):	9,8E-01
Release fraction to wastewater from process (initial release prior to	7,0E-04
RMM):	7,02-04
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	<b>G</b> ,
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	77,7
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	8,8E+04
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	local and/or regiona
regulations.	-
Conditions and measures related to external recovery of waste	
Estample and an analysis of waste about a combinable and backle	local and/or regions
External recovery and recycling of waste should comply with applicable regulations.	liocal allu/ol regiona

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise	

indicated.

## **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Date of last issue: 07.12.2023 Version Revision Date: SDS Number:

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Worker** 

30000000757	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13 Environmental Release Categories: ERC4, ESVOC SpERC 4.4a.v1
Scope of process	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.

SECTION 2	OPERATIONAL CONDITIONS AND RIS	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STF	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of	Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Condition	ns affecting Exposure	
Assumes use at not more that	an 20°C above ambient temperature (unles	s stated differently).
Assumes a good basis standard of assumptional business is implemented		

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Risk Management Measures
Bulk transfersNon-dedicated facilityPROC8a	No other specific measures identified.
Automated process with (semi closed systems.Use in contain systemsPROC2	· I
Automated process with (semi closed systems.Drum/batch trafersUse in contained batch processesPROC3	nns-
Application of cleaning product closed systemsPROC2	s in No other specific measures identified.
Filling/ preparation of equipme from drums or containers.PROC8b	nt No other specific measures identified.
Use in contained batch proces esPROC4	s- No other specific measures identified.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

Degreasing small objects in	No other specific measures identifi		
cleaning stationPROC13	Two other specific measures identifi	cu.	
Cleaning with low-pressure washersPROC10	No other specific measures identifi	ed.	
Cleaning with high pressure	Provide a good standard of genera	I ventilation (not less th	an
washersPROC7	3 to 5 air changes per hour).	,	
	Limit the substance content in the	product to 5 %.	
Marria IO (consolir dispersion PROCA)	N	- 1	
ManualSurfacesCleaningPROC10	No other specific measures identifi	ea.	
Storage.PROC1	Store substance within a closed sy	stem.	
	rol of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in regi		0,1	
Regional use tonnage (tonnes/year)		320	
Fraction of Regional tonnage used I	ocally:	3,2E-01	
Annual site tonnage (tonnes/year):		100	
Maximum daily site tonnage (kg/day	<i>(</i> ):	5,0E+03	
Frequency and Duration of Use			
Continuous release.			
Emission Days (days/year):		20	
Environmental factors not influer	nced by risk management		
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
Other Operational Conditions affe	•		
Release fraction to air from process		1,0	
Release fraction to wastewater from process (initial release prior to RMM):  3,0E-06			
Release fraction to soil from proces		0	
	es at process level (source) to pre	event release	
Common practices vary across sites	s thus conservative process re-		
lease estimates used.			
Technical onsite conditions and i sions and releases to soil	measures to reduce or limit disch	arges, air emis-	
Risk from environmental exposure i	s driven by freshwater.		
Prevent discharge of undissolved su	ubstance to or recover from onsite		
wastewater.			
No wastewater treatment required.			
Treat air emission to provide a typical removal efficiency of (%)		70	
Treat onsite wastewater (prior to rec		0	
the required removal efficiency of >:			
If discharging to domestic sewage to	reatment plant, no secondary	0	
wastewater treatment required.	ont/limit voloces from alta		
Organisational measures to prevent			
Do not apply industrial sludge to nat			
Sludge should be incinerated, conta	uned of recialfiled.		

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage	93,6	
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite	93,6	
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following	8,3E+06	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	

#### Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise	

indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 - Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Date of last issue: 07.12.2023 Version Revision Date: SDS Number:

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Worker** 

30000000756	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13, PROC 15, PROC 19 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.3b.v1
Scope of process	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.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGI MEASURES	EMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless differently).,	stated
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently).		

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Risk Management Measures
General exposures (closed sy tems)PROC1	No other specific measures identified.
Filling/ preparation of equipme from drums or containers.Use contained systemsPROC2	
General exposures (closed sy tems)Use in contained systemsPROC2	S- No other specific measures identified.
Preparation of material for applicationUse in contained batch processesPROC3	No other specific measures identified.
Film formation - air dry- ingOutdoorPROC4	No other specific measures identified.
Film formation - air dryingln-doorPROC4	No other specific measures identified.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

Preparation of material for applicationIndoorPROC5	No other specific measures identified.	
Preparation of material for applicationOutdoorPROC5	No other specific measures identified.	
Material transfersDrum/batch transfersNon-dedicated facilityPROC8a	No other specific measures identified.	
Material transfersDrum/batch transfersDedicated facilityPROC8b	No other specific measures identified.	
Roller, spreader, flow application- IndoorPROC10	No other specific measures identified.	
Roller, spreader, flow applicationOutdoorPROC10	No other specific measures identified.	
ManualSprayingIndoorPROC11	Carry out in a vented booth or extracted enclosure. , or: Wear a full face respirator conforming to EN136 with Type	
	A/P2 filter or better.	
ManualSprayingOutdoorPROC11	Ensure operation is undertaken outdoors.  Avoid carrying out activities involving exposure for more than 4 hours  Limit the substance content in the mixture to 50 %.  , or:	
	Wear a full face respirator conforming to EN136 with Type A/P2 filter or better.	
Dipping, immersion and pouringIndoorPROC13	No other specific measures identified.	
Dipping, immersion and pouringOutdoorPROC13	No other specific measures identified.	
Laboratory activitiesPROC15	No other specific measures identified.	
Hand application - fingerpaints, pastels, adhesivesIndoorPROC19	No other specific measures identified.	
Hand application - fingerpaints, pastels, adhesivesOut-doorPROC19	No other specific measures identified.	
Storage.PROC1	Store substance within a closed system.	
	trol of Environmental Exposure	
Substance is complex UVCB.  Predominantly hydrophobic		

Section 2.2	<b>Control of Environmental Exposure</b>		
Substance is complex UVCB.	Substance is complex UVCB.		
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in region: 0,1		0,1	
Regional use tonnage (tonnes/year): 2,2E+0		2,2E+03	
Fraction of Regional tonnage used locally: 5,		5,0E-04	
Annual site tonnage (tonnes/year): 1,1		1,1	
Maximum daily site tonnage (kg/day): 3,0		3,0	

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	300
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	100
Release fraction to air from wide dispersive use (regional only):	9,8E-01
Release fraction to wastewater from wide dispersive use:	1,0E-02
Release fraction to soil from wide dispersive use (regional only):	1,0E-02
Technical conditions and measures at process level (source) to pr	*
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges air emis-
sions and releases to soil	arges, an emis-
Risk from environmental exposure is driven by freshwater.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	0
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
ordago oriodia do momeratoa, contamoa or rociamoa.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	00,0
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	,
Maximum allowable site tonnage (MSafe) based on release following	4,7E+03
total wastewater treatment removal (kg/d)	,
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	
External treatment and disposal of waste should comply with applicable	-
regulations.	<b>5</b> -
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regiona
regulations.	=

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.		

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 - Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Worker** 

	Exposure occination Worker		
30000000758			
SECTION 1	EXPOSURE SCENARIO TITLE		
Title	Use in Cleaning Agents- Professional		
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4b.v1		
Scope of process	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).		

SECTION 2	OPERATIONAL CONDITIONS AND RIS	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STF	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 10 differently).,	00% (unless stated
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios **Risk Management Measures** Filling/ preparation of equipment No other specific measures identified. from drums or containers.Dedicated facilityPROC8b Filling/ preparation of equipment Avoid carrying out activities involving exposure for more from drums or containers. Nonthan 4 hours dedicated facilityPROC8a Automated process with (semi) No other specific measures identified. closed systems. Use in contained systemsPROC2 Automated process with (semi) No other specific measures identified. closed systems. Drum/batch transfersUse in contained batch processesPROC3 Semi Automated process. (e.g.: No other specific measures identified. Semi automatic application of floor care and maintenance products)PROC4

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

ManualSurfacesCleaningDipping, immersion and pouringPROC13	No other specific measures identified.
ManualSurfacesCleaningPROC13	No other specific measures identified.
Cleaning with low-pressure washers ers Rolling, Brushing no spraying PROC10	No other specific measures identified.
Cleaning with high pressure washersSprayingIndoorPROC11	Limit the substance content in the product to 1 %.
Cleaning with high pressure washersSprayingOutdoorPROC11	Limit the substance content in the product to 1 %.
ManualSurfacesCleaningPROC10	Limit the substance content in the product to 25 %.
Ad hoc manual application via trigger sprays, dipping, etc.Rolling, BrushingPROC10	Limit the substance content in the product to 25 %.
Application of cleaning products in closed systemsPROC4	No other specific measures identified.
Cleaning of medical devic- esPROC4	No other specific measures identified.
Storage.PROC1	Store substance within a closed system.

Section 2.2		trol of Environmental Exposure	1
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used	in regi	ion:	0,1
Regional use tonnage (tonne	s/year	):	2,0
Fraction of Regional tonnage	used	locally:	5,0E-04
Annual site tonnage (tonnes/	year):		1,0E-03
Maximum daily site tonnage (	(kg/day	y):	2,7E-03
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):			365
Environmental factors not i		nced by risk management	
Local freshwater dilution factor	or:		10
Local marine water dilution fa			100
		ecting Environmental Exposure	
Release fraction to air from w			2,0E-02
Release fraction to wastewate			1,0E-06
Release fraction to soil from v			0
		res at process level (source) to pro	event release
	ss site	s thus conservative process re-	
lease estimates used.			
	s and i	measures to reduce or limit discha	arges, air emis-
sions and releases to soil			T
Risk from environmental expo		s driven by freshwater.	
No wastewater treatment req			
Treat air emission to provide			0
Treat onsite wastewater (prio	r to re	ceiving water discharge) to provide	0

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version SDS Number: Date of last issue: 07.12.2023 Revision Date:

800010059269 Print Date 04.04.2024 1.6 28.03.2024

the required removal efficiency of >= (%)		
If discharging to domestic sewage treatment plant, no secondary	0	
wastewater treatment required.		
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures related to municipal sewage treatment p	olant	
Estimated substance removal from wastewater via domestic sewage	93,6	
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite	93,6	
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following	7,1	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Measures related to external treatment of waste for disposal		
External treatment and disposal of waste should comply with applicable	e local and/or regional	
regulations.	-	
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable	local and/or regional	
regulations.	-	

	SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health			
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise		

indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.	

Where other Risk Management Measures/Operational Conditions are adopted, then users

should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 -Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet

(http://cefic.org).

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Worker** 

suresPROC4

Treatment and disposal of filtered solidsPROC3
Process samplingPROC3

•	Exposure operation worker		
30000000783			
SECTION 1	EXPOSURE SCENARIO TITLE		
Title	Use in Oil and Gas field drilling and production operations-		
	Industrial		
Use Descriptor	Sector of Use: SU3		
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4,		
	PROC 8a, PROC 8b		
	Environmental Release Categories: ERC4		
	, and the second		
Scope of process	Oil field well drilling and production operations (including drilling muds and well cleaning) including material transfers, onsite formulation, well head operations, shaker room activities and related maintenance.		

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Additional Information	No exposure assessment presented for the environment.	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Sub-	Covers use of substance/product up to 100% (unless stated	
stance in Mixture/Article	differently).,	
Frequency and Duration of	Use	
	8 hours (unless stated differently).	
Other Operational Conditio		
Assumes use at not more than 20°C above ambient temperature (unless stated differently) Assumes a good basic standard of occupational hygiene is implemented.		
Contributing Scenarios	Risk Management Measures	
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.	
Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b	No other specific measures identified.	
Drilling mud (re- )formulationPROC3	No other specific measures identified.	
Drill floor operationsPROC4	No other specific measures identified.	
Operation of solids filtering equipment - vapour expo-		

No other specific measures identified.

No other specific measures identified.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Store substance within a closed system.  Control of Environmental Exposure
Store substance within a closed system
No other specific measures identified.
No other specific measures identified.
No other specific measures identified.
_

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures upless otherwise		

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

#### **Section 3.2 - Environment**

No exposure assessment presented for the environment.

Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment.

Qualitative approach used to conclude safe use.

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO  Section 4.1 - Health		
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management	
Measures/Operational Conditions outlined in Section 2 are implemented		ions outlined in Section 2 are implemented

Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 -Environment	
No exposure assessment presented for the environment.	

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Worker** 

Exposure coeffairo Worke	•
30000000784	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Lubricants- Industrial
Use Descriptor	Sector of Use: SU3
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 17, PROC 18
	Environmental Release Categories: ERC4, ERC7, ESVOC SpERC 4.6a.v1
Scope of process	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,		
Frequency and Duration of	Use		
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Conditions affecting Exposure			
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			

**Contributing Scenarios Risk Management Measures** General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 General exposures (open sys-No other specific measures identified. tems)PROC4 Bulk transfersDedicated facili-No other specific measures identified. tyPROC8b Filling/ preparation of equipment No other specific measures identified. from drums or containers. Nondedicated facilityPROC8a Filling/ preparation of equipment No other specific measures identified. from drums or containers.Dedicated facilityPROC8b Initial factory fill of equip-No other specific measures identified. mentPROC9 Operation and lubrication of No other specific measures identified. high energy open equipmentPROC17PROC18

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

ManualRolling, BrushingPROC10		No other specific measures identified	d.
Treatment by dipping and pour- ingPROC13		No other specific measures identified.	
SprayingPROC7		Carry out in a vented booth or extract	cted enclosure.
Maintenance (of larger plant items) and machine set upDe cated facilityPROC8b	di-	No other specific measures identified	d.
Maintenance (of larger plant items) and machine set upOp eration is carried out at elevat temperature (> 20°C above ambient temperature). Dedicated facilityPROCE	ted	Drain down and flush system prior to maintenance.	equipment opening or
Maintenance of small itemsNo dedicated facilityPROC8a	on-	No other specific measures identified	d.
Remanufacture of reject articlesPROC9		No other specific measures identified	d.
Storage.PROC1PROC2		Store substance within a closed syst	tem.
Section 2.2		ntrol of Environmental Exposure	
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			1
	in ro	vaion.	0.1
Fraction of EU tonnage used			0,1
Regional use tonnage (tonnes			700
Fraction of Regional tonnage			0,14
Annual site tonnage (tonnes/y			100
Maximum daily site tonnage (			5,0E+03
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):			20
Environmental factors not i	nflu	enced by risk management	
Local freshwater dilution factor	or:		10
Local marine water dilution fa	ctor		100
		ffecting Environmental Exposure	
		ss (initial release prior to RMM):	5,0E-03
		om process (initial release prior to	3,0E-05
	oroc	ess (initial release prior to RMM):	1,0E-03
		ures at process level (source) to pr	
		tes thus conservative process re-	
lease estimates used.			
Technical onsite conditions sions and releases to soil	and	d measures to reduce or limit disch	arges, air emis-
	)CLIP	o is driven by freshwater sediment	
		e is driven by freshwater sediment.	
wastewater.	ived	substance to or recover from onsite	
No wastewater treatment requ	uiro	1	
ino wasiewater treatment requ	unec	۸.	

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Treat air emission to provide a typical removal efficiency of (%)	70
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	2,1E+06
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

#### **Section 3.2 - Environment**

regulations.

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO		
Section 4.1 - Health		
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management		
Measures/Operational Conditions outlined in Section 2 are implemented		

Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technolo-

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

gies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Worker** 

Exposure Scenario - Worker		
30000000785		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Lubricants- ProfessionalLow Environmental Release	
Use Descriptor	Sector of Use: SU22	
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 17, PROC 18, PROC 20  Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 8.6c.v1	
Scope of process	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.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,		
Frequency and Duration of	Use		
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Condition	ons affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios Risk Management Measures

General exposures (closed systems)PROC1PROC2PROC3	No other specific measures identified.
Operation of equipment containing engine oils and similar.PROC20	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Bulk transfersPROC8b	No other specific measures identified.
Filling/ preparation of equipment from drums or containers. Dedicated facilityPROC8b	No other specific measures identified.
Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a	Avoid carrying out activities involving exposure for more than 4 hours
Operation and lubrication of high energy open equipmentIndoorPROC17PROC18	Provide extraction ventilation at points where emissions occur.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

Departion and lubrication of high energy open equipmentOut-doorPROC17				
And machine set upPROC8b   Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature). Dedicated facilityPROC8b   Drain or remove substance from equipment prior to breaktion is carried out at elevated temperation is carried out at elevated temperature (> 20°C above ambient temperature). Non-dedicated facilityPROC8a   Drain or remove substance from equipment prior to breaktion is carried out at elevated temperature). Non-dedicated facilityPROC8a   Drain or remove substance from equipment prior to breaktion or maintenance.    ManualRolling, BrushingPROC10   No other specific measures identified.	energy open equipmentOut-	Avoid carrying out activities involvir		
and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature). Dedicated facilityPROC8b  Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature). Dedicated facilityPROC8b  Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature). Non-dedicated facilityPROC8a  Engine lubricant servicePROC9  ManualRolling, BrushingPROC10  No other specific measures identified.  SprayingPROC11  Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A filter or better.  Treatment by dipping and pouringPROC13  Storage.PROC1PROC2  Store substance within a closed system.  Section 2.2  Control of Environmental Exposure  Substance is complex UVCB.  Predominantly hydrophobic.  Readily biodegradable.  Amounts Used  Fraction of EU tonnage used in region: 0,1  Regional use tonnage (tonnes/year): 12  Freation of Regional tonnage used locally: 5,0E-04  Annual site tonnage (tonnes/year): 5,8E-03  Maximum daily site tonnage (kg/day): 1,6E-02  Frequency and Duration of Use  Continuous release.  Emission Days (days/year): 365  Environmental factors not influenced by risk management  Local freshwater dilution factor: 100  Other Operational Conditions affecting Environmental Exposure		No other specific measures identific	ed.	
Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facilityPROC8a  Engine lubricant servicePROC9  ManualRolling, BrushingPROC10  SprayingPROC11  SprayingPROC11  Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).  Avoid carrying out activities involving exposure for more than 4 hours , or:  Wear a respirator conforming to EN140 with Type A filter or better.  Treatment by dipping and pouringPROC13  Storage.PROC1PROC2  Store substance within a closed system.  Section 2.2  Control of Environmental Exposure  Substance is complex UVCB.  Predominantly hydrophobic.  Readily biodegradable.  Amounts Used  Fraction of EU tonnage used in region:  Regional use tonnage (tonnes/year):  Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Environmental factors not influenced by risk management  Local marine water dilution factor:  100  Other Operational Conditions affecting Environmental Exposure	and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature). Dedicated facili-	1	ent opening or mainte	-
Engine lubricant servicePROC9   No other specific measures identified.	Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facili-		quipment prior to break	(-
SprayingPROC11  Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A filter or better.  Treatment by dipping and pouringPROC13  Storage.PROC1PROC2  Store substance within a closed system.  Section 2.2  Control of Environmental Exposure  Substance is complex UVCB. Predominantly hydrophobic. Readily biodegradable.  Amounts Used  Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): 12 Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 5,8E-03  Maximum daily site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): 365  Environmental factors not influenced by risk management Local freshwater dilution factor: 10 Cother Operational Conditions affecting Environmental Exposure		No other specific measures identific	ed.	
(5 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A filter or better.  Treatment by dipping and pouringPROC13 Storage.PROC1PROC2 Store substance within a closed system.  Section 2.2 Control of Environmental Exposure  Substance is complex UVCB. Predominantly hydrophobic. Readily biodegradable. Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): 12 Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 5,8E-03 Maximum daily site tonnage (kg/day): 1,6E-02 Frequency and Duration of Use Continuous release. Emission Days (days/year): 365 Environmental factors not influenced by risk management Local freshwater dilution factor: 10 Other Operational Conditions affecting Environmental Exposure	ManualRolling, BrushingPROC10	No other specific measures identific	ed.	
IngPROC13 Storage.PROC1PROC2 Store substance within a closed system.  Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Readily biodegradable. Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year): 5,0E-04 Annual site tonnage (tonnes/year): 5,8E-03 Maximum daily site tonnage (kg/day): 1,6E-02 Frequency and Duration of Use Continuous release. Emission Days (days/year): Society of Regional tonnage used locally: 1,6E-02 Frequency and Duration of Use Continuous release. Emission Days (days/year): 10 Local freshwater dilution factor: 10 Cother Operational Conditions affecting Environmental Exposure	SprayingPROC11	(5 to 15 air changes per hour). Avoid carrying out activities involvir than 4 hours , or: Wear a respirator conforming to EN	ng exposure for more	
Storage.PROC1PROC2  Store substance within a closed system.  Section 2.2  Substance is complex UVCB.  Predominantly hydrophobic.  Readily biodegradable.  Amounts Used  Fraction of EU tonnage used in region:  Regional use tonnage (tonnes/year):  Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  Other Operational Conditions affecting Environmental Exposure		No other specific measures identific	ed.	
Substance is complex UVCB.  Predominantly hydrophobic.  Readily biodegradable.  Amounts Used  Fraction of EU tonnage used in region:  Regional use tonnage (tonnes/year):  Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  Other Operational Conditions affecting Environmental Exposure		Store substance within a closed sy	stem.	
Substance is complex UVCB.  Predominantly hydrophobic.  Readily biodegradable.  Amounts Used  Fraction of EU tonnage used in region:  Regional use tonnage (tonnes/year):  Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  Other Operational Conditions affecting Environmental Exposure	Section 2.2 Contr	rol of Environmental Exposure		
Predominantly hydrophobic.  Readily biodegradable.  Amounts Used  Fraction of EU tonnage used in region:  Regional use tonnage (tonnes/year):  Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  5,0E-04  Annual site tonnage (tonnes/year):  5,8E-03  Maximum daily site tonnage (kg/day):  1,6E-02  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  10  Local marine water dilution factor:  100  Other Operational Conditions affecting Environmental Exposure				
Readily biodegradable.  Amounts Used  Fraction of EU tonnage used in region: 0,1  Regional use tonnage (tonnes/year): 12  Fraction of Regional tonnage used locally: 5,0E-04  Annual site tonnage (tonnes/year): 5,8E-03  Maximum daily site tonnage (kg/day): 1,6E-02  Frequency and Duration of Use  Continuous release.  Emission Days (days/year): 365  Environmental factors not influenced by risk management  Local freshwater dilution factor: 10  Local marine water dilution factor: 100  Other Operational Conditions affecting Environmental Exposure				
Fraction of EU tonnage used in region:  Regional use tonnage (tonnes/year):  Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  Other Operational Conditions affecting Environmental Exposure				
Regional use tonnage (tonnes/year):  Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  Other Operational Conditions affecting Environmental Exposure	Amounts Used			
Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  1,6E-02  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  365  Environmental factors not influenced by risk management  Local freshwater dilution factor:  10  Local marine water dilution factor:  100  Other Operational Conditions affecting Environmental Exposure	Fraction of EU tonnage used in region	on:	0,1	
Annual site tonnage (tonnes/year): 5,8E-03  Maximum daily site tonnage (kg/day): 1,6E-02  Frequency and Duration of Use  Continuous release.  Emission Days (days/year): 365  Environmental factors not influenced by risk management  Local freshwater dilution factor: 10  Local marine water dilution factor: 100  Other Operational Conditions affecting Environmental Exposure	Regional use tonnage (tonnes/year):		12	
Maximum daily site tonnage (kg/day):  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  Servironmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  Other Operational Conditions affecting Environmental Exposure	Fraction of Regional tonnage used lo	ocally:	5,0E-04	
Frequency and Duration of Use Continuous release.  Emission Days (days/year):  Environmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  Other Operational Conditions affecting Environmental Exposure	Annual site tonnage (tonnes/year):		5,8E-03	
Continuous release.  Emission Days (days/year): 365  Environmental factors not influenced by risk management  Local freshwater dilution factor: 10  Local marine water dilution factor: 100  Other Operational Conditions affecting Environmental Exposure	Maximum daily site tonnage (kg/day	):	1,6E-02	
Emission Days (days/year):  Solution 1	Frequency and Duration of Use			
Environmental factors not influenced by risk management  Local freshwater dilution factor:  Local marine water dilution factor:  Other Operational Conditions affecting Environmental Exposure	Continuous release.			
Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Other Operational Conditions affecting Environmental Exposure			365	
Local marine water dilution factor: 100 Other Operational Conditions affecting Environmental Exposure		ced by risk management		
Other Operational Conditions affecting Environmental Exposure				
			100	
Release fraction to air from process (initial release prior to RMM): 1,0E-02		•		
	Release fraction to air from process	(initial release prior to RMM):	1,0E-02	

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Release fraction to wastewater from process (initial release prior to	1,0E-02
RMM):	
Release fraction to soil from process (initial release prior to RMM):	1,0E-02
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	41
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	-
regulations.	Ç
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	local and/or regiona

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise		
indicated.		

Section 3.2 -Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1 - Health		
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management		

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 - Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Date of last issue: 07.12.2023 Version Revision Date: SDS Number:

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### **Exposure Scenario - Worker**

3000000786		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Lubricants- ProfessionalHigh Environmental Release	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 17, PROC 18, PROC 20 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.6c.v1	
Scope of process	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.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics	Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,		
Frequency and Duration of Use			
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Conditions affecting Exposure			
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			

Contributing Scenarios	Risk	Management Measures
General exposures (closed sy tems)PROC1PROC2PROC3	/S-	No other specific measures identified.
Operation of equipment conta engine oils and similar.PROC	_	No other specific measures identified.
General exposures (open systems)PROC4	-	No other specific measures identified.
Bulk transfersPROC8b		No other specific measures identified.
Filling/ preparation of equipm from drums or containers. Dedicated facilityPROC8b		No other specific measures identified.
Filling/ preparation of equipm from drums or containers.Nor dedicated facilityPROC8a		Avoid carrying out activities involving exposure for more than 4 hours
Operation and lubrication of henergy open equipmentIndoorPROC17PROC18	igh	Provide extraction ventilation at points where emissions occur.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

Operation and lubrication of high energy open equipmentOut-doorPROC17	Avoid carrying out operation for more than 4 hours.		
Maintenance (of larger plant items) and machine set upPROC8b	No other specific measures identified.		
Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature). Dedicated facilityPROC8b	Drain down system prior to equipment opening or maintenance.		
Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facilityPROC8a	Drain or remove substance from equipment prior to breakin or maintenance.		
Engine lubricant servicePROC9	No other specific measures identified.		
ManualRolling, BrushingPROC10	No other specific measures identified.		
SprayingPROC11	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A filter or better.		
Treatment by dipping and pour-ingPROC13	No other specific measures identified.		
Storage.PROC1PROC2	Store substance within a closed system.		
Section 2.2 Cont	trol of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in reg	ion: 0,1		
Pegional use tonnage (tonnes/year			

Section 2.2	Control of Environmental Expos	sui <del>c</del>	
Substance is complex UVCB			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used	Amounts Used		
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne	s/year):	12	
Fraction of Regional tonnage	used locally:	5,0E-04	
Annual site tonnage (tonnes/	year):	5,8E-03	
Maximum daily site tonnage	kg/day):	1,6E-02	
Frequency and Duration of			
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not i	nfluenced by risk management		
Local freshwater dilution factor	or:	10	
Local marine water dilution fa		100	
Other Operational Conditions affecting Environmental Exposure			
	ride dispersive use (regional only):	1,5E-01	
Release fraction to air from w	ride dispersive use (regional only):	5,0E-02	
		-, J <b>-</b>	

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Release fraction to soil from wide dispersive use (regional only):	5,0E-02		
Technical conditions and measures at process level (source) to prevent release			
Common practices vary across sites thus conservative process re-			
lease estimates used.			
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-		
sions and releases to soil			
Risk from environmental exposure is driven by freshwater.			
No wastewater treatment required.			
Treat air emission to provide a typical removal efficiency of (%)	0		
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0		
If discharging to domestic sewage treatment plant, no secondary	0		
wastewater treatment required.			
Organisational measures to prevent/limit release from site			
Do not apply industrial sludge to natural soils.			
Sludge should be incinerated, contained or reclaimed.			
Conditions and Measures related to municipal sewage treatment p	lant		
Estimated substance removal from wastewater via domestic sewage	93,6		
treatment (%)	00.0		
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6		
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	40		
, <b>9</b> /	2.000		
Assumed domestic sewage treatment plant flow (m3/d)			
Conditions and Measures related to external treatment of waste for disposal			
External treatment and disposal of waste should comply with applicable local and/or regional			
rogulations			
regulations.			
Conditions and measures related to external recovery of waste			
	local and/or regiona		

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise		
indicated.		

# Section 3.2 -Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1 - Health		
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management		
Measures/Operational Conditions outlined in Section 2 are implemented.		
Where other Risk Management Measures/Operational Conditions are adopted, then users		

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Worker** 

3000000787		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Metal working fluids / rolling oils- Industrial	
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 17 Environmental Release Categories: ERC4, ESVOC SpERC 4.7a.v1	
Scope of process	Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Sub-	Covers use of substance/product up to 100% (unless stated	
stance in Mixture/Article	differently).,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently).		

Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Risk	Management Measures	
General exposures (closed sy tems)PROC1PROC2PROC3		No other specific measures identified.	
General exposures (open systems)PROC4	<b>5-</b>	No other specific measures identified.	
Bulk transfersPROC8b		No other specific measures identified.	
Filling/ preparation of equipm from drums or containers.PROC8bPROC5PROC9	ent	No other specific measures identified.	
Process samplingPROC8b		No other specific measures identified.	
Metal machining operationsPROC17		No other specific measures identified.	
Treatment by dipping and pour ingPROC13	ur-	No other specific measures identified.	

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

SprayingPROC7	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.
ManualRolling, BrushingPROC10	No other specific measures identified.
Automated metal roll- ing/formingUse in contained sys- temsOperation is carried out at elevated temperature (> 20°C above ambient tempera- ture).PROC2	No other specific measures identified.
Semi-automated metal roll- ing/formingOperation is carried out at elevated temperature (> 20°C above ambient tempera- ture).PROC17	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.
Equipment cleaning and maintenanceDedicated facilityPROC8b	No other specific measures identified.
Equipment cleaning and maintenanceNon-dedicated facilityPROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	10
Fraction of Regional tonnage	used locally:	1
Annual site tonnage (tonnes/		10
Maximum daily site tonnage (	kg/day):	500
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		20
Environmental factors not i	nfluenced by risk management	
Local freshwater dilution factor	or:	10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	
	rocess (initial release prior to RMM):	2,0E-02
Release fraction to wastewate RMM):	er from process (initial release prior to	3,0E-05
Release fraction to soil from p	process (initial release prior to RMM):	0
Technical conditions and m	neasures at process level (source) to p	revent release
Common practices vary acros lease estimates used.	ss sites thus conservative process re-	
	and managers to radius or limit disal	hargas air amis
sions and releases to soil	s and measures to reduce or limit discl	iaryes, air emis-
Risk from environmental expo	seura is drivan by frashwater	
	lved substance to or recover from onsite	
Frevent discharge of undisso	ived substance to or recover from onsite	

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

wastewater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	70
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	8,3E+05
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	

SECTION 3	EXPOSURE ESTIMATION

#### Section 3.1 - Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 -Environment

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

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org).

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### **Exposure Scenario - Worker**

30000000788	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Metal working fluids / rolling oils- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 17 Environmental Release Categories: ERC8a, ERC8b, ESVOC SpERC 9.6b.v1
Scope of process	Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/ reject articles, and disposal of waste oils.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,		
Frequency and Duration of	Use		
Covers daily exposures up to	8 hours (unless stated differently).		
Other Operational Condition	ns affecting Exposure		
Assumes use at not more that	an 20°C above ambient temperature (unless stated differently).		
. A			

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Risk Managen	nent Measures	
General exposures (closed sy tems)PROC1PROC2PROC3	/S-	No other specific measures identified.	
Bulk transfersPROC8b		No other specific measures identified.	
Filling/ preparation of equipmer or containers.PROC5PROC8aPROC8b		No other specific measures identified.	
Process samplingDedicated f	acilityPROC8b	No other specific measures identified.	
Metal machining operationsP	ROC17	Provide a good standard of general or controlle ventilation (5 to 15 air changes per hour).	ed
ManualRolling, BrushingPRO	C10	No other specific measures identified.	
SprayingPROC11		Provide a good standard of general or controlle ventilation (5 to 15 air changes per hour).	ed

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

		ties involving exposure for
	more than 4 hours	
	, or:	= 11440 114 =
		rming to EN140 with Type
	A/P2 filter or better.	
Treatment by dipping and pouringPROC13	No other specific measu	res identified.
Equipment cleaning and maintenance-PROC8aPROC8b	Drain down system prior maintenance.	to equipment opening or
T NOODAL NOODD	maintenance.	
Storage.PROC1PROC2	Store substance within a	a closed system.
Section 2.2 Control of Env	rironmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonnes/year):		5,0
Fraction of Regional tonnage used locally:		5,0E-04
Annual site tonnage (tonnes/year):		2,5E-03
Maximum daily site tonnage (kg/day):		6,8E-03
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influenced by ris	sk management	
Local freshwater dilution factor:		10
		100
Other Operational Conditions affecting Env		
Release fraction to air from wide dispersive us		5,0E-02
Release fraction to wastewater from wide disp		2,5E-02
Release fraction to soil from wide dispersive u		0
Technical conditions and measures at prod		event release
Common practices vary across sites thus conslease estimates used.	servative process re-	
Technical onsite conditions and measures	to reduce or limit disch	arges, air emis-
sions and releases to soil		<b>g</b> ,
Risk from environmental exposure is driven by	/ freshwater.	
No wastewater treatment required.		
Treat air emission to provide a typical removal		0
Treat onsite wastewater (prior to receiving water discharge) to provide		0
the required removal efficiency of >= (%)		
If discharging to domestic sewage treatment p	olant, no secondary	0
wastewater treatment required.		
Organisational measures to prevent/limit re	elease from site	
Do not apply industrial sludge to natural soils.	.1.21	
Sludge should be incinerated, contained or rec	ciaimed.	
Conditions and Measures related to munic	ipal sewage treatment p	lant
Estimated substance removal from wastewate	er via domestic sewage	93,6

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	18
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03

#### Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has b	peen used to estimate workplace exposures unless otherwise

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Continu A.A. Hanith	

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Date of last issue: 07.12.2023 Version Revision Date: SDS Number:

1.6 28.03.2024 800010059269 Print Date 04.04.2024

IO TITLE ease agents- Industrial
ease agents- Industrial
PROC 1, PROC 2, PROC 3, PROC 4,
OC 8b, PROC 10, PROC 13, PROC 14
se Categories: ERC4, ESVOC SpERC
στο στο ση Επισούς Επισ
lers and release agents including ma-
application (including spraying and
g of waste.
<b>,</b>
( S

SECTION 2	OPERATIONAL CONDITIONS AND RIS	SK MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STF	•
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of Use		
Covers daily exposures up to	o 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios   I	Risk Management Measures
Material transfersUse in con-	No other specific measures identified.
tained sys-	
temsPROC1PROC2PROC3	
Drum/batch transfersPROC8b	No other specific measures identified.
Mixing operations (closed sys-	No other specific measures identified.
tems)PROC3	
Mixing operations (open sys-	No other specific measures identified.
tems)PROC4	
Mold formingPROC14	No other specific measures identified.
Casting operations(open sys-	Provide extraction ventilation at points where emissions oc-
tems)Operation is carried out a	t cur.
elevated temperature (> 20°C	
above ambient tempera-	
ture). Aerosol generation due to	
elevated process temperature-	
PROC6	
SprayingMachinePROC7	Minimise exposure by partial enclosure of the operation or

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

	equipment and provide extract ventila	ation at openings.
SprayingManualPROC7	Provide a good standard of general o to 15 air changes per hour). Avoid carrying out activities involving 4 hours	,
ManualRolling, Brush- ingPROC10	No other specific measures identified	
Dipping, immersion and pouringPROC13	No other specific measures identified	
Storage.PROC1PROC2 Store substance within a closed system.		em.
Section 2.2 Co	ontrol of Environmental Exposure	
Substance is complex UVCB.	-	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in r	egion:	0,1
Regional use tonnage (tonnes/ye		70
Fraction of Regional tonnage use		1
Annual site tonnage (tonnes/year		70
Maximum daily site tonnage (kg/		3,5E+03
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		20
Environmental factors not influ	uenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor	r:	100
Other Operational Conditions	affecting Environmental Exposure	
Release fraction to air from proce	ess (initial release prior to RMM):	1,0
Release fraction to wastewater from process (initial release prior to 3,0E-06		3,0E-06
RMM):		
	cess (initial release prior to RMM):	0
	sures at process level (source) to pro	event release
	ites thus conservative process re-	
lease estimates used.	d management and make an limit disab	
	d measures to reduce or limit discha	arges, air emis-
sions and releases to soil	ro in driven by freebyyeter	
Risk from environmental exposur		
wastewater.	d substance to or recover from onsite	
	d	
No wastewater treatment require Treat air emission to provide a ty		80
	receiving water discharge) to provide	0
the required removal efficiency o		
If discharging to domestic sewag		0
wastewater treatment required.	5 a saumont plant, no socondary	
Organisational measures to pr	event/limit release from site	1
Do not apply industrial sludge to natural soils.		
Sludge should be incinerated, co		

According to EC No 1907/2006 as amended as at the date of this SDS

### ShellSol A100 Low Cumene

Date of last issue: 07.12.2023 Version Revision Date: SDS Number:

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	6,5E+06
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for disposal	

### inditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3 EXPOSURE ESTIMATION		EXPOSURE ESTIMATION
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise		

indicated.

### Section 3.2 -Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO
Section 4.1 - Health	

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

### Section 4.2 -Environment

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

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Date of last issue: 07.12.2023 Version Revision Date: SDS Number:

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Exposure Contains Worker		
30000000791	3000000791	
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use as binders and release agents- Professional	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 6, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 14 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.10b.v1	
Scope of process	Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of	• /	
Covers daily exposures up to	o 8 hours (unless stated differently).	
Other Operational Condition	ons affecting Exposure	
	an 20°C above ambient temperature (unless stated differently). dard of occupational hygiene is implemented.	

Contributing Scenarios	Risk Management Measures
Bulk transfersUse in contained systemsPROC1PROC2PROC	No other specific measures identified.
Drum/batch transfer- sPROC8aPROC8b	No other specific measures identified.
Mixing operations (closed systems)PROC3	No other specific measures identified.
Mixing operations (open systems)PROC4	No other specific measures identified.
Mold formingPROC14	No other specific measures identified.
Casting operations(open systems)Operation is carried out a elevated temperature (> 20°C above ambient temperature).PROC6	Provide extraction ventilation at points where emissions occur.
SprayingMachinePROC11	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. , or:

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

	Wear a respirator conforming to EN14 better.	40 with Type A filter or
	Detter.	
SprayingManualPROC11	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).  Avoid carrying out activities involving exposure for more than 4 hours	
ManualRolling, Brush- ingPROC10	No other specific measures identified	•
Storage.PROC1PROC2	Store substance within a closed syste	em.
Section 2.2 Co	ontrol of Environmental Exposure	
Substance is complex UVCB.	•	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in r	eaion:	0,1
Regional use tonnage (tonnes/ye		30
Fraction of Regional tonnage use		5,0E-04
Annual site tonnage (tonnes/year		1,5E-02
Maximum daily site tonnage (kg/		4,1E-02
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influ	uenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
	affecting Environmental Exposure	
Release fraction to air from wide	, , ,	9,5E-01
Release fraction to wastewater fr		2,5E-02
Release fraction to soil from wide		2,5E-02
	sures at process level (source) to pro-	event release
	ites thus conservative process re-	
lease estimates used.	d management and dealers on limit disale	
sions and releases to soil	d measures to reduce or limit disch	arges, air emis-
Risk from environmental exposur	ro is driven by freebyeater	
No wastewater treatment required.  Treat air emission to provide a typical removal efficiency of (%)		0
Treat onsite wastewater (prior to receiving water discharge) to provide		0
the required removal efficiency of >= (%)		
If discharging to domestic sewage treatment plant, no secondary		0
wastewater treatment required.		
Organisational measures to pr	event/limit release from site	
Do not apply industrial sludge to		
Sludge should be incinerated, co	ntained or reclaimed.	
<b>Conditions and Measures relat</b>	ed to municipal sewage treatment p	lant
	om wastewater via domestic sewage	93,6
treatment (%)		

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6	
Maximum allowable site tonnage (MSafe) based on release following	82	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Massaures related to external treatment of wests for disposal		

#### Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3	EXPOSURE ESTIMATION		
Section 3.1 - Health			
The ECETOC TRA tool has be indicated.	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.		

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
On attack A.A. Illandel	

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

30000000792	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Agrochemicals uses- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 11, PROC 13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11a.v1
Scope of process	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT	
	MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Conditio	ns affecting Exposure	
Assumes use at not more that	in 20°C above ambient temperature (unless stated differently). ard of occupational hygiene is implemented.	
Contributing Scenarios	Risk Management Measures	
Transfer from/pouring from containersPROC8b	No other specific measures identified.	
Mixing in contain- ers.PROC4	No other specific measures identified.	
Spraying/ fogging by manual applicationPROC11	Wear a respirator conforming to EN140 with Type A/P2 filter or better.	
Spraying/ fogging by machine applicationPROC11	Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20. , or:	
	Wear a respirator conforming to EN140 with Type A/P2 filter or better.	
Ad hoc manual application via trigger sprays, dipping, etc.PROC13	No other specific measures identified.	
Equipment cleaning and maintenancePROC8a	No other specific measures identified.	
Storage.PROC1PROC2	Store substance within a closed system.	

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

Continuo	Control of Francisco and all Francisco	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB	).	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used		0,1
Regional use tonnage (tonne		610
Fraction of Regional tonnage		2,0E-03
Annual site tonnage (tonnes/	year):	1,2
Maximum daily site tonnage	(kg/day):	3,4
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
	influenced by risk management	1
Local freshwater dilution fact		10
Local marine water dilution fa		100
	ons affecting Environmental Exposure	
	vide dispersive use (regional only):	9,0E-01
		1,0E-02
Release fraction to wastewater from wide dispersive use:  Release fraction to soil from wide dispersive use (regional only):		9,0E-02
Technical conditions and measures at process level (source) to pr		
	ss sites thus conservative process re-	CVCIII ICICASC
lease estimates used.	33 Sites thus conservative process re-	
	s and measures to reduce or limit disch	arge air emis-
sions and releases to soil	s and measures to reduce or minit discir	arges, air eims-
Risk from environmental exp	osure is driven by soil	
No wastewater treatment rec		
	a typical removal efficiency of (%)	0
	or to receiving water discharge) to provide	0
the required removal efficien		
	wage treatment plant, no secondary	0
wastewater treatment require		
	o prevent/limit release from site	
Do not apply industrial sludge	•	
Sludge should be incinerated		
Gladge Should be memerated	i, contained of recialified.	
Conditions and Measures	elated to municipal sewage treatment p	lant
	al from wastewater via domestic sewage	93,6
treatment (%)	il Ilolli wastewater via dolliestic sewage	95,0
	om wastewater after onsite and offsite	93,6
(domestic treatment plant) R		93,0
	nage (MSafe) based on release following	4,7E+03
total wastewater treatment re		4,7 = +03
		2.05+02
Assumed domestic sewage t		2,0E+03
	related to external treatment of waste fo	
•	sal of waste should comply with applicable	liocal and/or regional
regulations.		
Oppolitions and Investor		
	related to external recovery of waste	
External recovery and recycl	ing of waste should comply with applicable	iocal and/or regional

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

regulations.

#### Section 3.1 - Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

# SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Exposure Scenario - Worker		
30000000793		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use as a fuel- Industrial	
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 8b, PROC 16 Environmental Release Categories: ERC7, ESVOC SpERC 7.12a.v1	
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Sub-	Covers use of substance/product up to 100% (unless stated	
stance in Mixture/Article	differently).,	
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Conditio	ns affecting Exposure	
	nn 20°C above ambient temperature (unles	
Assumes a good basic stand	ard of occupational hygiene is implemented	d.
Contributing Scenarios	Risk Management Measures	
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.	
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.	
General exposures (closed systems)PROC1PROC2	No other specific measures identified.	
Use as a fuel(closed systems)PROC16PROC3	No other specific measures identified.	
Equipment cleaning and maintenancePROC8a	No other specific measures identified.	
Storage.PROC1PROC2	Store substance within a closed system.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		<u>I</u>
Fraction of EU tonnage used in region: 0,1		0.1
Fraction of EU torinage used	iii regioni.	0,1

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

	1
Fraction of Regional tonnage used locally:	1
Annual site tonnage (tonnes/year):	15
Maximum daily site tonnage (kg/day):	750
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	20
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	5,0E-03
Release fraction to wastewater from process (initial release prior to RMM):	1,0E-05
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	_
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	95
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,5E+06
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	
Combustion emissions limited by required exhaust emission controls.	•
Waste combustion emissions considered in regional exposure assessm	ent.
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is g	enerated.

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has be indicated.	een used to estimate workplace exposures unless otherwise

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 - Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Date of last issue: 07.12.2023 Version Revision Date: SDS Number:

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Exposure occitatio - Wol	No.
30000000794	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 8b, PROC 16 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.12b.v1
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

SECTION 2	OPERATIONAL CONDITIONS AND RIS	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STF	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 10 differently).,	00% (unless stated
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.
Drum/batch transfersDedicated facilityPROC8b	d No other specific measures identified.
Refueling.Dedicated facili- tyPROC8b	No other specific measures identified.
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified.
Use as a fuel(closed systems)PROC16	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	15
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	7,5E-03
Maximum daily site tonnage (kg/day):	2,1E-02
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	1,0E-04
Release fraction to wastewater from wide dispersive use:	1,0E-05
Release fraction to soil from wide dispersive use (regional only):	1,0E-05
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch- sions and releases to soil	arges, air emis-
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	93,0
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	53
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	r disposal
Combustion emissions limited by required exhaust emission controls. Waste combustion emissions considered in regional exposure assessm	-
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is g	enerated.

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise	
indicated.	

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	<b>GUIDANCE TO CHECK COMPLIANCE WITH THE</b>
	EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 -Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Worker** 

30000000796	
OFOTION 4	EVECUIES COENADIO TITLE
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Functional Fluids- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 9, PROC 20 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.13b.v1
Scope of process	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in professional equipment including maintenance and related material transfers.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMEN MEASURES	Т
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of	Use	
Covers daily exposures up to	o 8 hours (unless stated differently).	
Other Operational Condition	ons affecting Exposure	
	an 20°C above ambient temperature (unless stated differently lard of occupational hygiene is implemented.	y).

Assumes a good basic standard of occupational hygiene is implemented.

		1	
Contributing Scenarios	Ris	sk Management Measures	
Drum/batch transfersNon-dedicated facilityPROC8a		Use drum pumps.	
Transfer from/pouring from coltainersPROC9	n-	No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.PROC9	ent	No other specific measures identified.	
General exposures (closed systems)PROC1PROC2PROC	23	No other specific measures identified.	
Operation of equipment containing engine oils and similar.PROC20	in-	No other specific measures identified.	
Operation of equipment contai ing engine oils and simi- lar.Operation is carried out at elevated temperature (> 20°C above ambient tempera- ture).PROC20	in-	No other specific measures identified.	
Remanufacture of reject arti-		No other specific measures identified.	

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

clesPROC9		
Equipment maintenance- PROC8a	Drain down system prior to equipme nance.	nt opening or mainte-
Storage.PROC1PROC2	Store substance within a closed syst	tem.
Section 2.2 Co	ontrol of Environmental Exposure	
Substance is complex UVCB.	ontrol of Environmental Exposure	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in re	agion:	0.1
Regional use tonnage (tonnes/ye		0,1
Fraction of Regional tonnage use		5,0E-04
		-
Annual site tonnage (tonnes/year		7,5E-03
Maximum daily site tonnage (kg/		2,1E-02
Frequency and Duration of Use	•	
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influ	ienced by risk management	Τ
Local freshwater dilution factor:		10
Local marine water dilution factor		100
Other Operational Conditions a	affecting Environmental Exposure	
Release fraction to air from wide		5,0E-02
Release fraction to wastewater fr		2,5E-02
Release fraction to soil from wide		2,5E-02
	sures at process level (source) to pr	event release
Common practices vary across sites thus conservative process release estimates used.		
	d measures to reduce or limit disch	arges. air emis-
sions and releases to soil		J. J
Risk from environmental exposur	e is driven by freshwater.	
No wastewater treatment require		
Treat air emission to provide a ty		0
	receiving water discharge) to provide	0
the required removal efficiency o		
If discharging to domestic sewag		0
wastewater treatment required.	, , , , , , , , , , , , , , , , , , , ,	
Organisational measures to pr	event/limit release from site	1
Do not apply industrial sludge to		
Sludge should be incinerated, co		
	ed to municipal sewage treatment p	lant
Estimated substance removal fro	m wastewater via domestic sewage	93,6
treatment (%)		
	vastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs		
Maximum allowable site tonnage total wastewater treatment remov	(MSafe) based on release following	52
		1005 00
Assumed domestic sewage treat	ment plant flow (m3/d)	2,0E+03

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

# SECTION 3 EXPOSURE ESTIMATION

#### Section 3.1 - Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

# SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Exposure oceriano - Worker	
30000000795	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Functional Fluids- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9 Environmental Release Categories: ERC7, ESVOC SpERC 7.13a.v1
Scope of process	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES
Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of	Use
Covers daily exposures up to	8 hours (unless stated differently).
Other Operational Conditio	
	in 20°C above ambient temperature (unless stated differently).
Assumes a good basic stands	ard of occupational hygiene is implemented.
	, , , , , , , , , , , , , , , , , , , ,
Contributing Scenarios	Risk Management Measures
Bulk transfers(closed systems)PROC1PROC2	No other specific measures identified.
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.
Filling of arti- cles/equipment(closed sys-	No other specific measures identified.
tems)PROC9	
Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a	No other specific measures identified.
General exposures (closed systems)PROC2	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Remanufacture of reject articlesPROC9	No other specific measures identified.
Equipment maintenance- PROC8a	No other specific measures identified.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

Storage.PROC1PROC2	Store substance within a closed system.		
Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used		<u>I</u>	
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne		15	
Fraction of Regional tonnage		0,67	
Annual site tonnage (tonnes/		10	
Maximum daily site tonnage (		500	
Frequency and Duration of		000	
Continuous release.	USE .		
Emission Days (days/year):		20	
	nfluonand by rick management	20	
Local freshwater dilution factor	nfluenced by risk management	10	
Local marine water dilution fa		100	
	ns affecting Environmental Exposure	T 05 00	
	rocess (initial release prior to RMM):	5,0E-03	
RMM):	er from process (initial release prior to	3,0E-05	
	process (initial release prior to RMM):	1,0E-03	
	neasures at process level (source) to pr	event release	
	ss sites thus conservative process re-		
lease estimates used.			
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil			
Risk from environmental expo	osure is driven by freshwater.		
	lved substance to or recover from onsite		
wastewater.			
No wastewater treatment req	uired.		
Treat air emission to provide	a typical removal efficiency of (%)	0	
	r to receiving water discharge) to provide	0	
the required removal efficience			
	wage treatment plant, no secondary	0	
wastewater treatment require			
	prevent/limit release from site	ı	
Do not apply industrial sludge			
Sludge should be incinerated, contained or reclaimed.			
	Conditions and Measures related to municipal sewage treatment plant		
Estimated substance remova	elated to municipal sewage treatment p I from wastewater via domestic sewage	93,6	
Estimated substance remova treatment (%)	I from wastewater via domestic sewage	93,6	
Estimated substance remova treatment (%) Total efficiency of removal from	I from wastewater via domestic sewage		
Estimated substance remova treatment (%) Total efficiency of removal fro (domestic treatment plant) RN	I from wastewater via domestic sewage m wastewater after onsite and offsite MMs (%)	93,6	
Estimated substance removal treatment (%) Total efficiency of removal fro (domestic treatment plant) RN Maximum allowable site tonni	I from wastewater via domestic sewage m wastewater after onsite and offsite MMs (%) age (MSafe) based on release following	93,6	
Estimated substance removal treatment (%) Total efficiency of removal fro (domestic treatment plant) RI Maximum allowable site tonatotal wastewater treatment re	I from wastewater via domestic sewage m wastewater after onsite and offsite MMs (%) age (MSafe) based on release following moval (kg/d)	93,6	
Estimated substance removal treatment (%) Total efficiency of removal fro (domestic treatment plant) RN Maximum allowable site tonni	I from wastewater via domestic sewage m wastewater after onsite and offsite MMs (%) age (MSafe) based on release following moval (kg/d)	93,6	

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

regulations.

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

#### SECTION 3 EXPOSURE ESTIMATION

#### Section 3.1 - Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSIBE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Exposure ocenano - Worker	
30000000802	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Road and construction applications- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13 Environmental Release Categories: ERC8d, ERC8f, ESVOC SpERC 8.15.v1
Scope of process	Application of surface coatings and binders in road and construction activities, including paving uses, manual mastic and in the application of roofing and water-proofing membranes.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of Worker Exposure
Product Characteristics	Total of the literature and the
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of	Use
Covers daily exposures up to	8 hours (unless stated differently).
Other Operational Conditio	ns affecting Exposure
Assumes use at not more that	n 20°C above ambient temperature (unless stated differently).
Assumes a good basic standa	ard of occupational hygiene is implemented.
Contributing Scenarios	Risk Management Measures
Drum/batch transfersNon- dedicated facilityPROC8a	No other specific measures identified.
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.
Drum/batch transfersDedicated facilityOperation is carried out at elevated temperature (> 20°C above ambient tempera-	Ensure operation is undertaken outdoors.  Avoid carrying out activities involving exposure for more than 4 hours
ture).PROC8b	
ManualRolling, Brush- ingPROC10	Ensure operation is undertaken outdoors.
Spraying/ fogging by machine applicationOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC11	Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better. Limit the substance content in the mixture to 50 %.
Spraying/ fogging by ma-	Ensure operation is undertaken outdoors.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

chine applicationPROC11	Wear a respirator conforming to EN140 v better.	with Type A filter or
Dipping, immersion and pouringPROC13	No other specific measures identified.	
Drum and small package fillingPROC9	No other specific measures identified.	
Equipment cleaning and maintenancePROC8a	Drain down system prior to equipment or nance.	pening or mainte-
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB	•	
Predominantly hydrophobic.	•	
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne		22
Fraction of Regional tonnage		5,0E-04
Annual site tonnage (tonnes/	•	1,1E-02
Maximum daily site tonnage		3,0E-02
Frequency and Duration of		0,0L 0Z
Continuous release.	030	
Emission Days (days/year):		365
	influenced by risk management	303
Local freshwater dilution fact		10
Local marine water dilution fa		100
	ons affecting Environmental Exposure	100
	vide dispersive use (regional only):	9,5E-01
Release fraction to wastewat		1,0E-02
	wide dispersive use (regional only):	4,0E-02
Technical conditions and measures at process level (source) to prevent release  Common practices vary across sites thus conservative process re-		
lease estimates used.	oo dhoo mad oonoon vaaro process re	
	s and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		goo, oo
Risk from environmental exp	osure is driven by freshwater.	
No wastewater treatment rec		
	a typical removal efficiency of (%)	0
	or to receiving water discharge) to provide	0
the required removal efficien		
	wage treatment plant, no secondary	0
wastewater treatment require	ed.	
Organisational measures to	o prevent/limit release from site	
Do not apply industrial sludge	e to natural soils.	
Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures	related to municipal sewage treatment p	lant
	al from wastewater via domestic sewage	93,6
treatment (%)		
Total efficiency of removal from	om wastewater after onsite and offsite	93,6
(domestic treatment plant) R	MMs (%)	

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	77
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03

#### Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has be indicated.	peen used to estimate workplace exposures unless otherwise

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Exposure occurrer Worker		
30000000806		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use in laboratories- Industrial	
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 10, PROC 15 Environmental Release Categories: ERC2, ERC4	
Scope of process	Use of the substance within laboratory settings, including material transfers and equipment cleaning.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure 0.5 - 10 k	Pa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Condition		•
	an 20°C above ambient temperature ard of occupational hygiene is imple	
Contributing Scenarios	Risk Management Measures	
Laboratory activitiesPROC15	No other specific measures identified.	
CleaningPROC10	No other specific measures identified.	
Section 2.2	Control of Environmental Expos	sure
Substance is complex UVCB	•	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	2,5
Fraction of Regional tonnage	used locally:	0,8
Annual site tonnage (tonnes/	year):	2,0
Maximum daily site tonnage (kg/day):		100
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		20
<b>Environmental factors not</b>	influenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
	ns affecting Environmental Expo	

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Release fraction to air from process (initial release prior to RMM):	2,5E-02	
Release fraction to wastewater from process (initial release prior to RMM):	2,0E-02	
Release fraction to soil from process (initial release prior to RMM):	1,0E-04	
Technical conditions and measures at process level (source) to pro-	event release	
Common practices vary across sites thus conservative process release estimates used.		
Technical onsite conditions and measures to reduce or limit discharges and releases to soil	arges, air emis-	
Risk from environmental exposure is driven by freshwater sediment.		
No wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%)	0	
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0	
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures related to municipal sewage treatment p	lant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6	
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	3,1E+03	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Measures related to external treatment of waste for disposal		
External treatment and disposal of waste should comply with applicable regulations.	•	
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable regulations.	local and/or regional	

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise		
indicated.		

# Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 -Environment

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

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

30000000810	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 10, PROC 15 Environmental Release Categories: ERC8a, ESVOC SpERC 8.17.v1
Scope of process	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics	•	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at \$	STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Condition	ons affecting Exposure	
Assumes use at not more that	an 20°C above ambient temperature (unles	ss stated differently).
Assumes a good basic standard of occupational hygiene is implemented.		
Contributing Scenarios	Risk Management Measures	
Laboratory activi- tiesPROC15	No other specific measures identified.	
CleaningPROC10	No other specific measures identified.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCE	).	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	es/year):	2,0
Fraction of Regional tonnage used locally:		5,0E-04
Annual site tonnage (tonnes/year):		1,0E-03
Maximum daily site tonnage (kg/day):		2,7E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year): 365		365
	influenced by risk management	
Local freshwater dilution fact		10
Local marine water dilution factor: 100		100

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from wide dispersive use (regional only):	5,0E-01	
Release fraction to wastewater from wide dispersive use:	5,0E-01	
Release fraction to soil from wide dispersive use (regional only):	0	
Technical conditions and measures at process level (source) to pro-	event release	
Common practices vary across sites thus conservative process re-		
lease estimates used.		
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-	
sions and releases to soil	<b>,</b>	
Risk from environmental exposure is driven by freshwater.		
No wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%)	0	
Treat onsite wastewater (prior to receiving water discharge) to provide	0	
the required removal efficiency of >= (%)		
If discharging to domestic sewage treatment plant, no secondary	0	
wastewater treatment required.		
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures related to municipal sewage treatment p	lant	
Estimated substance removal from wastewater via domestic sewage	93,6	
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite	93,6	
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following	6,8	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Measures related to external treatment of waste for disposal		
External treatment and disposal of waste should comply with applicable local and/or regional		
regulations.	-	
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable local and/or regional		
regulations.		

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise		

indicated.

### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

30000000815	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Water treatment chemicals- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 13 Environmental Release Categories: ERC3, ERC4, ESVOC SpERC 3.22a.v1
Scope of process	Covers the use of the substance for the treatment of water at industrial facilities in open and closed systems.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Sub-	Covers use of substance/product up to 10	00% (unless stated
stance in Mixture/Article	differently).,	
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Conditio		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		
Contributing Scenarios	Risk Management Measures	
Bulk transfersUse in contained systemsPROC2	No other specific measures identified.	
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.	
General exposures (closed systems)Use in contained batch processesPROC3	No other specific measures identified.	
General exposures (open systems)PROC4	No other specific measures identified.	
Pouring from small containersPROC13	No other specific measures identified.	
Equipment maintenance- PROC8a	Drain down and flush system prior to equipment opening or maintenance.	
Storage.PROC1	Store substance within a closed system.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	55
Fraction of Regional tonnage used locally:	0,54
	30
Annual site tonnage (tonnes/year):	
Maximum daily site tonnage (kg/day):	100
Frequency and Duration of Use	1
Continuous release.	000
Emission Days (days/year):	300
Environmental factors not influenced by risk management	10
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	T = - = -
Release fraction to air from process (initial release prior to RMM):	5,0E-02
Release fraction to wastewater from process (initial release prior to RMM):	9,5E-01
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to pro	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit discharge	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by freshwater sediment.	
Onsite waste water treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	95,8
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	34,9
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite	95,8
(domestic treatment plant) RMMs (%)	00,0
Maximum allowable site tonnage (MSafe) based on release following	100
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	
External treatment and disposal of waste should comply with applicable regulations.	local and/or regiona
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	local and/or regiona

SECTION 3	EXPOSURE ESTIMATION

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

### Section 3.1 - Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE	
	EXPOSURE SCENARIO	

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

# **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

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30000000820	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Water treatment chemicals- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 13 Environmental Release Categories: ERC8f, ESVOC SpERC 8.22b.v1
Scope of process	Covers the use of the substance for the treatment of water in open and closed systems.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES			
Section 2.1	Control of Worker Exposure			
Product Characteristics				
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP			
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,			
Frequency and Duration of Use				
Covers daily exposures up to	8 hours (unless stated differently).			
Other Operational Conditio				
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.				
Contributing Scenarios	Risk Management Measures			
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.			
General exposures (closed systems)PROC3	No other specific measures identified.			
General exposures (open systems)PROC4	No other specific measures identified.			
Pouring from small containersPROC13	No other specific measures identified.			
Equipment maintenance- PROC8a	No other specific measures identified.			
Storage.PROC1PROC2	Store substance within a closed system.			
Section 2.2	Control of Environmental Exposure			
Substance is complex UVCB.				
Predominantly hydrophobic.				
Readily biodegradable.				
Amounts Used				
Fraction of EU tonnage used in region: 0,1				
Regional use tonnage (tonnes/year):		25		
Fraction of Regional tonnage used locally: 6,0E-02				

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

	T
Annual site tonnage (tonnes/year):	1,5
Maximum daily site tonnage (kg/day):	4,0
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	1,0E-02
Release fraction to wastewater from wide dispersive use:	9,9E-01
Release fraction to soil from wide dispersive use (regional only):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	<b>J</b> ,
Risk from environmental exposure is driven by soil.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0,7
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	•
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
,	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	,
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	,
Maximum allowable site tonnage (MSafe) based on release following	48
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	1
External treatment and disposal of waste should comply with applicable local and/or regional	
regulations.	
- · <b>J</b> · ··· · ·	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise		
indicated.		

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 - Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Consumer** 

30000001122	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Functional Fluids - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC16, PC17 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.13c.v1
Scope of process	Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100	0 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		2.200
covers skin contact area (cm2):		468
Frequency and Duration o	f Use	
Unless stated otherwise.		
Covers use up to (days/year):		4
covers use up to (times/day of use):		1
Exposure (hours/event):		0,17
Other Operational Condition	ons affecting Exposure	

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Heat transfer fluids Liquids.	Covers concentrations up to 100 %	
	covers use up to 4 day/year	
	covers skin contact area up to (cm2): 468,00 cm2	
	For each use event, covers amount up to 2.200 g	
	Covers use in a one car garage (34 m3) under typical ventila-	
	tion.	
	Covers use in room size of 34 m3	
	Covers exposure up to 0,17 hours/event	
Hydraulic fluids Liquids.	Covers concentrations up to 100 %	
	covers use up to 4 day/year	

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

covers skin contact area up to (cm2): 468,00 cm2
For each use event, covers amount up to 2.200 g
Covers use in a one car garage (34 m3) under typical ventila-
tion.
Covers use in room size of 34 m3
Covers exposure up to 0,17 hours/event

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	15
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	year):	7,5E-03
Maximum daily site tonnage	(kg/day):	2,1E-02
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):	365	
Environmental factors not	influenced by risk management	
Local freshwater dilution fact	or:	10
Local marine water dilution factor:		100
	ns affecting Environmental Exposure	
	vide dispersive use (regional only):	5,0E-02
Release fraction to wastewater from wide dispersive use:		2,5E-02
Release fraction to soil from wide dispersive use (regional only):		2,5E-02
Conditions and Measures r	elated to municipal sewage treatment	olant
Estimated substance remova treatment (%)	Il from wastewater via domestic sewage	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)		52
		2,0E+03
	elated to external treatment of waste for	or disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise		
indicated.	·	

#### Section 3.2 -Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

the Petrorisk model.

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Consumer** 

Exposure occitatio oc	, nountry
30000001121	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC13 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.12c.v1
Scope of process	Covers consumer uses in liquid fuels.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure > 10 kPa a	at STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 10	00 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		37.500
covers skin contact area (cm2):		420
Frequency and Duration of	f Use	
Unless stated otherwise.		
covers use up to (times/day of use):		1
Exposure (hours/event):		2
Other Operational Conditi	ons affecting Exposure	·

#### Other Operational Conditions affecting Exposure

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Fuels Liquid: Automotive Refuelling.	Covers concentrations up to 100 %
	covers use up to 52 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210,00 cm2
	For each use event, covers amount up to 37.500 g
	Covers outdoor use.
	Covers use in room size of 100 m3
	Covers exposure up to 0,05 hours/event
Fuels Liquid Scooter Refuelling.	Covers concentrations up to 100 %
	covers use up to 52 day/year

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210,00 cm2
	For each use event, covers amount up to 3.750 g
	Covers outdoor use.
	Covers use in room size of 100 m3
	Covers exposure up to 0,03 hours/event
Fuels Liquid, Garden	Covers concentrations up to 100 %
Equipment - Use.	Covers contectitiations up to 100 /0
	covers use up to 26 day/year
	covers use up to 1 times/day of use
	For each use event, covers amount up to 750 g
	Covers outdoor use.
	Covers use in room size of 100 m3
	Covers exposure up to 2,00 hours/event
Fuels Liquid: Garden	Covers concentrations up to 100 %
Equipment - Refuelling.	Covers contectitiations up to 100 /0
Equipment Relating.	covers use up to 26 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 420,00 cm2
	For each use event, covers amount up to 750 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,03 hours/event
Fuels Liquid: Home space	Covers concentrations up to 100 %
heater fuel.	
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210,00 cm2
	For each use event, covers amount up to 3.000 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0,03 hours/event
Fuels Liquid: Lamp oil.	Covers concentrations up to 100 %
,	covers use up to 52 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210,00 cm2
	For each use event, covers amount up to 100 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0,01 hours/event
	1 Covers exposure up to 0,01 Hours/event

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in	region:	0,1
Regional use tonnage (tonnes/	year):	210
Fraction of Regional tonnage u	sed locally:	5,0E-04

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version SDS Number: Date of last issue: 07.12.2023 Revision Date:

1.6 28.03.2024 800010059269 Print Date 04.04.2024

Annual site tonnage (tonnes/year):	0,11
Maximum daily site tonnage (kg/day):	0,29
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	1,0E-04
Release fraction to wastewater from wide dispersive use:	1,0E-05
Release fraction to soil from wide dispersive use (regional only):	1,0E-05
Conditions and Measures related to municipal sewage treatment p	olant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	
Maximum allowable site tonnage (MSafe) based on release following	750
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	r disposal
Combustion emissions limited by required exhaust emission controls.	
Waste combustion emissions considered in regional exposure assessment	nent.
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is g	generated.

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise	

indicated.

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
•	are not expected to exceed the DN(M)EL when the Risk Management al Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users

should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 - Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technolo-

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

gies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Consumer** 

30000001120	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Agrochemicals uses - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: , PC27 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11b.v1
Scope of process	Covers the consumer use in agrochemicals in liquid and solid forms.

SECTION 2	OPERATIONAL CONDITIONS AND MEASURES	RISK MANAGEMENT
Section 2.1	Control of Consumer Exposure	
Product Characteristics	•	
Physical form of product	Liquid, vapour pressure > 10 kPa at S	STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 50 %	)
Amounts Used		
Unless stated otherwise.		
covers skin contact area (cr	n2):	857,5
Frequency and Duration of	of Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day	of use):	1
Exposure (hours/event):		4
Other Operational Conditi	one affecting Exposure	

## Other Operational Conditions affecting Exposure

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Fertilizers Lawn and garden preparations.	Covers concentrations up to 15 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, assumes swallowed amount of 0,3 g
	Covers exposure up to 4 hours/event
Plant protection products	Covers concentrations up to 15 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

For each use event, assumes swallowed amount of 0,3 g

Section 2.2 Control of Environmental Exposure		
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	20
Fraction of Regional tonnage	used locally:	2,0E-03
Annual site tonnage (tonnes/	year):	4,0E-02
Maximum daily site tonnage		0,11
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
Environmental factors not	influenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Condition	ns affecting Environmental Exposure	
Release fraction to air from w	vide dispersive use (regional only):	9,0E-01
Release fraction to wastewat	er from wide dispersive use:	1,0E-02
Release fraction to soil from wide dispersive use (regional only):		9,0E-02
Conditions and Measures r	elated to municipal sewage treatment p	plant
Estimated substance remova	Il from wastewater via domestic sewage	93,6
treatment (%)		
Maximum allowable site tonnage (MSafe) based on release following		227
total wastewater treatment removal (kg/d)		
9		2,0E+03
	elated to external treatment of waste for	-
External treatment and dispo al regulations.	sal of waste should comply with applicable	e local and/or region-

Conditions and measures related to external recovery of waste

nal regulations.

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has be indicated.	een used to estimate consumer exposures unless otherwise	

#### Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 - Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Consumer** 

Exposure occitatio - cons		
30000001119		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Lubricants - Consumer High Environmental Release	
Use Descriptor	Sector of Use: SU21	
_	Product Categories: PC1, PC24, PC31	
	Environmental Release Categories: ERC8a, ERC8d,	
	ESVOC SpERC 8.6c.v1	
Scope of process	Covers the consumer use of formulated lubricants in closed	
	and open systems including transfer operations, application,	
	operation of engines and similar articles, equipment mainte-	
	nance and disposal of waste oil.	
	hance and disposal of waste oil.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Consumer Exposure	Control of Consumer Exposure	
<b>Product Characteristics</b>			
Physical form of product	Liquid, vapour pressure > 10 kPa	at STP	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.		
	Covers concentration up to (%): 10	00 %	
Amounts Used			
Unless stated otherwise.			
for each use event, covers amount up to (g):		6.390	
covers skin contact area (cm2):		468	
Frequency and Duration o	f Use		
Unless stated otherwise.			
covers use up to (times/day of use):		1	
Exposure (hours/event):		6	
Other Operational Conditions affecting Exposure			

#### Other Operational Conditions affecting Exposure

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Adhesives, sealants Glues, hobby use.	Covers concentrations up to 30 %	
	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 35,73 cm2	
	For each use event, covers amount up to 9 g	
	Covers use in room size of 20m3	
	Covers use under typical household ventilation.	
_	Covers exposure up to 4 hours/event	

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

Adhesives, sealants Glues DIY-use (carpet glue, tile	Covers concentrations up to 30 %
glue, wood parquet glue).	
	covers use up to 1 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110,00 cm2
	For each use event, covers amount up to 6.390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 6,00 hours/event
Adhesives, sealants Glue from spray.	Covers concentrations up to 30 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 85,05 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4,00 hours/event
Adhesives, sealants Sealants.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 75 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1,00 hours/event
Lubricants, greases, re- lease products Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 2.200 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event
Lubricants, greases, release products Pastes.	Covers concentrations up to 20 %
	covers use up to 10 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 34 g
	Covers exposure up to 4,00 hours/event
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 73 g

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,17 hours/event
Polishes and wax blends Polishes, wax / cream (floor, furniture, shoes).	Covers concentrations up to 50 %
	covers use up to 29 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 142 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1,23 hours/event
Polishes and wax blends Polishes, spray (furniture, shoes).	Covers concentrations up to 50 %
	covers use up to 8 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 35 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event

Section 2.2	Section 2.2 Control of Environmental Exposure			
Substance is complex UVCB.	Substance is complex UVCB.			
Predominantly hydrophobic.				
Readily biodegradable.				
Amounts Used				
Fraction of EU tonnage used	in region:	0,1		
Regional use tonnage (tonne	s/year):	12		
Fraction of Regional tonnage	used locally:	5,0E-04		
Annual site tonnage (tonnes/		5,8E-03		
Maximum daily site tonnage (	kg/day):	1,6E-02		
Frequency and Duration of				
Continuous release.				
Emission Days (days/year):		365		
Environmental factors not i	nfluenced by risk management			
Local freshwater dilution factor:		10		
Local marine water dilution factor:		100		
	ns affecting Environmental Exposure			
Release fraction to air from w	ide dispersive use (regional only):	1,5E-01		
Release fraction to wastewater from wide dispersive use:		5,0E-02		
Release fraction to soil from wide dispersive use (regional only):		5,0E-02		
Conditions and Measures related to municipal sewage treatment plant				
Estimated substance remova treatment (%)	I from wastewater via domestic sewage	93,6		
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	age (MSafe) based on release following moval (kg/d)	40		
Assumed domestic sewage treatment plant flow (m3/d)		2,0E+03		

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

#### SECTION 3 EXPOSURE ESTIMATION

#### Section 3.1 - Health

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

## SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Consumer** 

30000001118	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Lubricants - Consumer Low Environmental Release
Use Descriptor	Sector of Use: SU21 Product Categories: PC1, PC24, PC31 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.6d.v1
Scope of process	Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Consumer Exposure	Control of Consumer Exposure	
<b>Product Characteristics</b>			
Physical form of product	Liquid, vapour pressure > 10 kPa a	t STP	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.		
	Covers concentration up to (%): 10	0 %	
Amounts Used			
Unless stated otherwise.			
for each use event, covers amount up to (g):		6.390	
covers skin contact area (cm2):		468	
Frequency and Duration o	f Use		
Unless stated otherwise.			
covers use up to (times/day of use):		1	
Exposure (hours/event):		6	
Other Operational Condition	ons affecting Exposure		

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Adhesives, sealants Glues, hobby use.	Covers concentrations up to 30 %	
	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 35,73 cm2	
	For each use event, covers amount up to 9 g	
	Covers use in room size of 20m3	
	Covers use under typical household ventilation.	
	Covers exposure up to 4 hours/event	

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

Adhesives, sealants Glues	Covers concentrations up to 30 %
DIY-use (carpet glue, tile	·
glue, wood parquet glue).	
<u> </u>	covers use up to 1 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110,00 cm2
	For each use event, covers amount up to 6.390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 6,00 hours/event
Adhesives, sealants Glue from spray.	Covers concentrations up to 30 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 85,05 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4,00 hours/event
Adhesives, sealants Sealants.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 75 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1,00 hours/event
Lubricants, greases, release products Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 2.200 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event
Lubricants, greases, release products Pastes.	Covers concentrations up to 20 %
	covers use up to 10 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 34 g
	Covers exposure up to 4,00 hours/event
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 73 g

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,17 hours/event
Polishes and wax blends Polishes, wax / cream (floor, furniture, shoes).	Covers concentrations up to 50 %
	covers use up to 29 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 142 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1,23 hours/event
Polishes and wax blends Polishes, spray (furniture, shoes).	Covers concentrations up to 50 %
	covers use up to 8 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 35 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event

Section 2.2	Control of Environmental Exposure			
Substance is complex UVCB.	Substance is complex UVCB.			
Predominantly hydrophobic.				
Readily biodegradable.				
Amounts Used				
Fraction of EU tonnage used	in region:	0,1		
Regional use tonnage (tonne	s/year):	12		
Fraction of Regional tonnage	used locally:	5,0E-04		
Annual site tonnage (tonnes/	year):	5,8E-03		
Maximum daily site tonnage (	kg/day):	1,6E-02		
Frequency and Duration of	Use			
Continuous release.				
Emission Days (days/year):		365		
Environmental factors not i	nfluenced by risk management			
Local freshwater dilution factor:		10		
Local marine water dilution factor:		100		
	ns affecting Environmental Exposure	_		
	ride dispersive use (regional only):	1,0E-02		
Release fraction to wastewater from wide dispersive use:		1,0E-02		
Release fraction to soil from wide dispersive use (regional only):		1,0E-02		
Conditions and Measures related to municipal sewage treatment plant				
Estimated substance remova treatment (%)	I from wastewater via domestic sewage	93,6		
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)		41		
Assumed domestic sewage treatment plant flow (m3/d)		2,0E+03		

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

#### Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

#### SECTION 3 EXPOSURE ESTIMATION

#### Section 3.1 - Health

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

## SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### Section 4.2 - Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Consumer** 

30000001117	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC3, PC4, PC8 (excipient only), PC9a, PC24, PC35, PC38 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4c.v1
Scope of process	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Expo	sure
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (	%): 100 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		13.800
covers skin contact area (cm2):		857,50
Frequency and Duration o	f Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		4
Exposure (hours/event):		8
<b>Other Operational Condition</b>	ons affecting Exposure	
Unless stated otherwise.		
Covers use at ambient temp		
Covers use in room size of 2		
Covers use under typical ho	usehold ventilation.	

OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Covers concentrations up to 50 %	
covers use up to 365 day/year	
covers use up to 4 times/day of use	
For each use event, covers amount up to 0,1 g	
Covers use under typical household ventilation.	

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

	Covers use in room size of 20m3	
	Covers exposure up to 0,25 hours/event	
Air care products Air care,	Covers concentrations up to 50 %	
instant action (aerosol	Covers concentrations up to 50 %	
sprays). pesticides (excipi-		
ent only).		
one only).	covers use up to 365 day/year	
	covers use up to 4 times/day of use	
	For each use event, covers amount up to 0,5 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 0,25 hours/event	
Air care products Air care,	Covers concentrations up to 10 %	
continuous action (solid and liquid).	Covers concentrations up to 10 70	
	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 35,70 cm2	
	For each use event, covers amount up to 0,48 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 8,00 hours/event	
Air care products Air care,	Covers concentrations up to 50 %	
continuous action (solid and liquid). pesticides (excipient only).	·	
5111 <b>y</b> ).	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 35,70 cm2	
	For each use event, covers amount up to 0,48 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 8,00 hours/event	
Anti-Freeze and de-icing	Covers concentrations up to 1 %	
products Washing car window.	Covere concentrations up to 1 70	
	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	For each use event, covers amount up to 0,5 g	
	Covers use in a one car garage (34 m3) under typical ventila-	
	tion.	
	Covers use in room size of 34 m3	
	Covers exposure up to 0,02 hours/event	
Anti-Freeze and de-icing products Pouring into radia-	Covers concentrations up to 10 %	
tor.		
	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 428,00 cm2	
	For each use event, covers amount up to 2.000 g	
	Covers use in a one car garage (34 m3) under typical ventila-	

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

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	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event
Anti-Freeze and de-icing products Lock de-icer.	Covers concentrations up to 50 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 214,40 cm2
	For each use event, covers amount up to 4 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,25 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry and dish washing products.	Covers concentrations up to 5 %
<b>J</b>	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 15 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0,50 hours/event
infectants, pest control) (excipient only). Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	
,	covers use up to 128 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0,33 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, trigger sprays (all purpose cleaners,sanitary products, glass cleaners).	Covers concentrations up to 15 %
	covers use up to 128 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,00 cm2
	For each use event, covers amount up to 35 g
	Covers use under typical household ventilation.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

	Covers exposure up to 0,17 hours/event
Coatings and paints, thin-	Covers concentrations up to 1,5 %
ners, paint removers Wa-	, , , , , , , , , , , , , , , , , , ,
terborne latex wall paint.	
Total Control	covers use up to 4 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 2.760 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,2 hours/event
Coatings and paints, thin-	Covers concentrations up to 27,5 %
ners, paint removers Solvent rich, high solid, water borne paint.	Covers concentrations up to 27,5 %
borrie pairit.	covers use up to 6 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 744 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,2 hours/event
Coatings and paints, thin-	Covers concentrations up to 50 %
ners, paint removers Aerosol spray can.	Covers concentrations up to 50 %
	covers use up to 2 day/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 215 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 24 m3
	Covers exposure up to 0,33 hours/event
Coatings and paints, thin- ners, paint removers Re- movers (paint-, glue-, wall	Covers concentrations up to 50 %
paper-, sealant-remover).	
	covers use up to 3 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 491 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,00 hours/event
Lubricants, greases, release products Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 2.200 g
	Covers use in a one car garage (34 m3) under typical ventilation.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

	Covers use in room size of 34 m3	
	Covers exposure up to 0,17 hours/event	
Lubricants, greases, release products Pastes.	Covers concentrations up to 20 %	
	covers use up to 10 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 468,00 cm2	
	For each use event, covers amount up to 34 g	
	Covers exposure up to 4 hours/event	
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %	
	covers use up to 6 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 428,75 cm2	
	For each use event, covers amount up to 73 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 0,17 hours/event	
Washing and cleaning products (including solvent based products) Laundry	Covers concentrations up to 5 %	
and dish washing products.	acuera una un ta 205 deviluer	
	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 857,50 cm2	
	For each use event, covers amount up to 15 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 0,50 hours/event	
Washing and cleaning products (including solvent based products) Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	Covers concentrations up to 5 %	
	covers use up to 1 times/day of use	
	covers use up to 128 day/year	
	covers skin contact area up to (cm2): 857,50 cm2	
	For each use event, covers amount up to 27 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 0,33 hours/event	
Washing and cleaning products (including solvent based products) Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners).	Covers concentrations up to 15 %	
	covers use up to 128 day/year	

regulations.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

covers use up to 1 times/day of use	
covers skin contact area up to (cm2): 428,00 cm2	
For each use event, covers amount up to 35 g	
Covers use under typical household ventilation.	
Covers use in room size of 20m3	
Covers exposure up to 0,17 hours/event	
Covers concentrations up to 20 %	
covers use up to 365 day/year	
covers use up to 1 times/day of use	
For each use event, covers amount up to 12 g	
Covers use under typical household ventilation.	
Covers use in room size of 20m3	
Covers exposure up to 1,00 hours/event	

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.	•	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in	region:	0,1
Regional use tonnage (tonnes/y		5,1
Fraction of Regional tonnage us	sed locally:	5,0E-04
Annual site tonnage (tonnes/ye	ar):	2,6E-03
Maximum daily site tonnage (kg		7,0E-03
Frequency and Duration of U		
Continuous release.		
Emission Days (days/year):		365
<b>Environmental factors not inf</b>	luenced by risk management	-
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from wide dispersive use (regional only):		9,5E-01
Release fraction to wastewater from wide dispersive use:		2,5E-02
Release fraction to soil from wide dispersive use (regional only):		2,5E-02
Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal for treatment (%)	rom wastewater via domestic sewage	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)		18
Assumed domestic sewage treatment plant flow (m3/d)		2,0E+03
Conditions and Measures rela	ated to external treatment of waste for	or disposal
External treatment and disposal of waste should comply with applicable local and/or region-		
al regulations.		
	ated to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional		

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### SECTION 3 EXPOSURE ESTIMATION

#### Section 3.1 - Health

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

# SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

#### Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

#### **Section 4.2 - Environment**

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

**Exposure Scenario - Consumer** 

30000001109	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC1, PC4, PC8 (excipient only), PC9a, PC9b, PC9c, PC15, PC18, PC23, PC24, PC31, PC34 Environmental Release Categories: ERC8a, ERC8b, ESVOC SpERC 8.3c.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS A MEASURES	ND RISK MANAGEMENT
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa	at STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 1	00 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		13.800
covers skin contact area (cm2):		857,50
Frequency and Duration of	Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		1
Exposure (hours/event):		6
Other Operational Condition	ons affecting Exposure	
Unless stated otherwise.		
Covers use at employet temperatures		

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Adhesives, sealants Glues, hobby use.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 9 g
	Covers use in room size of 20m3

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

	Covers use under typical household ventilation.
	Covers exposure up to 4 hours/event
Adhesives, sealants Glues	Covers concentrations up to 30 %
DIY-use (carpet glue, tile	Ouvers concentrations up to 30 %
glue, wood parquet glue).	
giao, wood parquot giao).	covers use up to 1 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110,00 cm2
	For each use event, covers amount up to 6.390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
Adhaniyan analanta Clua	Covers exposure up to 6,00 hours/event
Adhesives, sealants Glue	Covers concentrations up to 30 %
from spray.	account to C doction
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 85,05 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4,00 hours/event
Adhesives, sealants Sealants.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 75 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Avoid using when windows closed.
	Covers exposure up to 1,00 hours/event
Anti-Freeze and de-icing products Washing car window.	Covers concentrations up to 1 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	For each use event, covers amount up to 0,5 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,02 hours/event
Anti-Freeze and de-icing products Pouring into radiator.	Covers concentrations up to 10 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,00 cm2
	For each use event, covers amount up to 2.000 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

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	Covers exposure up to 0,17 hours/event
Anti-Freeze and de-icing products Lock de-icer.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 214,40 cm2
	For each use event, covers amount up to 4 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
Piccidal products (c.g. Dis	Covers exposure up to 0,25 hours/event  Covers concentrations up to 5 %
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry and dish washing products.	Covers concentrations up to 5 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 15 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0,50 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, liquids (all purpose clean- ers, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	Covers concentrations up to 5 %
	covers use up to 128 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0,33 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, trigger sprays (all purpose cleaners,sanitary products, glass cleaners).	Covers concentrations up to 15 %
,	covers use up to 128 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,00 cm2
	For each use event, covers amount up to 35 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0,17 hours/event
Coatings and paints, thin-	Covers concentrations up to 1,5 %
Coatingo ana painto, timi	1 001010 001100111111111111111111111111

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

nore point removers We	T
ners, paint removers Waterborne latex wall paint.	
terborne latex wall paint.	covers use up to 4 day/year
	covers use up to 4 day/year covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 2.760 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,20 hours/event
Coatings and paints, thin-	Covers concentrations up to 27,5 %
ners, paint removers Solvent rich, high solid, water borne paint.	Covers concentrations up to 21,3 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 744 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,20 hours/event
Coatings and paints, thin- ners, paint removers Aero-	Covers concentrations up to 50 %
sol spray can.	
	covers use up to 2 day/year
	covers use up to 1 times/day of use
	For each use event, covers amount up to 215 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0,33 hours/event
Coatings and paints, thin- ners, paint removers Re- movers (paint-, glue-, wall paper-, sealant-remover).	Covers concentrations up to 50 %
	covers use up to 3 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 491 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,00 hours/event
Fillers, Putties Fillers and putty.	Covers concentrations up to 2 %
	covers use up to 12 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 85 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4,00 hours/event

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

floor equalizers.	
•	covers use up to 12 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 13.800 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,00 hours/event
Fillers, Putties Modelling clay.	Covers concentrations up to 1 %
•	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 254,40 cm2
	For each use event, assumes swallowed amount of 1 g
Finger paints	Covers concentrations up to 1,25 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 254,40 cm2
	For each use event, assumes swallowed amount of 1,35 g
Non-metal-surface treat- ment products Waterborne latex wall paint.	Covers concentrations up to 1,5 %
latex wall pairit.	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 2.760 g
	Covers use under typical household ventilation.  Covers use in room size of 20m3
Non-metal-surface treat-	Covers exposure up to 2,20 hours/event  Covers concentrations up to 27,5 %
ment products Solvent rich, high solid, water borne paint.	Covers concentrations up to 27,5 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 744 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,20 hours/event
Non-metal-surface treat- ment products Aerosol spray can.	Covers concentrations up to 50 %
1 7	covers use up to 2 day/year
	covers use up to 1 times/day of use
	For each use event, covers amount up to 215 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,33 hours/event
Non-metal-surface treat-	Covers concentrations up to 50 %

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

ment products Removers	
(paint-, glue-, wall paper-,	
sealant-remover).	
	covers use up to 3 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 491 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2,00 hours/event
Ink and toners	Covers concentrations up to 10 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 71,40 cm2
	For each use event, covers amount up to 40 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 2,20 hours/event
Leather tanning, dye, finish-	Covers concentrations up to 50 %
ing, impregnation and care	'
products Polishes, wax /	
cream (floor, furniture,	
shoes).	
•	covers use up to 29 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 56 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 1,23 hours/event
Leather tanning, dye, finish-	Covers concentrations up to 50 %
ing, impregnation and care	
products Polishes, spray	
(furniture, shoes).	
(**************************************	covers use up to 8 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 56 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0,33 hours/event
Lubricants, greases, re-	Covers concentrations up to 100 %
lease products Liquids.	·
	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 2.200 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0,17 hours/event

According to EC No 1907/2006 as amended as at the date of this SDS

## **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

Lubricanto arragona re	Covers concentrations up to 20.0/
Lubricants, greases, re-	Covers concentrations up to 20 %
lease products Pastes.	covers use up to 10 day/year
	covers use up to 10 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 34 g
	Covers exposure up to 4 hours/event
Lubricants, greases, re-	Covers concentrations up to 50 %
lease products Sprays.	covers was up to C day/very
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 73 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,17 hours/event
Polishes and wax blends	Covers concentrations up to 50 %
Polishes, wax / cream	
(floor, furniture, shoes).	
	covers use up to 29 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 142 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1,23 hours/event
Polishes and wax blends	Covers concentrations up to 50 %
Polishes, spray (furniture,	, i
shoes).	
	covers use up to 8 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 35 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0,33 hours/event
Textile dyes, finishing and	Covers concentrations up to 10 %
impregnating products;	Covers concentrations up to 10 %
including bleaches and	
other processing aids	
other processing aids	covers use up to 365 day/year
	covers use up to 10 sos day/year covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 115 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 1,00 hours/event

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		

According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

28.03.2024 800010059269 Print Date 04.04.2024 1.6

Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	270
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	0,13
Maximum daily site tonnage (kg/day):	0,37
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	9,85E-01
Release fraction to wastewater from wide dispersive use:	1,0E-02
Release fraction to soil from wide dispersive use (regional only):	5,0E-03
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	840
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	local and/or region-
al regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise		

indicated.

#### **Section 3.2 - Environment**

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management	

Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

According to EC No 1907/2006 as amended as at the date of this SDS

#### **ShellSol A100 Low Cumene**

Version Revision Date: SDS Number: Date of last issue: 07.12.2023

1.6 28.03.2024 800010059269 Print Date 04.04.2024

#### Section 4.2 -Environment

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.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.