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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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

#### 1.1 Product identifier

Trade name : ShellSol 140/165

Product code : Q5911

Registration number EU : 01-2119471843-32-0001

Synonyms: Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2%

aromatics, ShellSol D25

EC-No. : 927-241-2

#### 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)

Instituto Nacional de Toxicologia: +34 91 562 04 20

+44 (0) 1235 239 670 (Este número de teléfono esta disponibles las 24 horas del día, 7

días de la semana)

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.

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

# **ShellSol 140/165**

SDS Number: Date of last issue: 12.12.2023 Version Revision Date:

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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

ways.

Specific target organ toxicity - single ex-H336: May cause drowsiness or dizziness.

posure, Category 3, Narcotic effects

egory 3

Long-term (chronic) aquatic hazard, Cat-H412: Harmful 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.

H336 May cause drowsiness or dizziness.

**ENVIRONMENTAL HAZARDS:** 

H412 Harmful to aquatic life with long lasting effects.

Supplemental Hazard

Statements

EUH066

Repeated exposure may cause skin dryness or

cracking.

Prevention: Precautionary statements

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

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 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### 2.3 Other hazards

The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

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 airvapour mixtures can occur.

Repeated exposure may cause skin dryness or cracking.

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

#### 3.1 Substances

## Components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)
Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not Assigned 927-241-2	<= 100

#### **Further information**

### Contains:

Chemical	Identification number	Classification	Concentration (% w/w)
name			
n-Hexane	6	Flam. Liq.2; H225 Skin Irrit.2; H315 Asp. Tox.1; H304 STOT RE2; H373 STOT SE3; H336 Repr.2; H361f Aquatic Chronic2; H411	< 5

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### **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 : 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.

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

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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.

Defatting dermatitis signs and symptoms may include a burn-

ing sensation and/or a dried/cracked appearance.

#### 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).

Specific extinguishing meth-

ods

Standard procedure for chemical fires.

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

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### **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 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.

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### 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  $\leq 7$  m/s). Avoid splash filling. Do NOT use 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 / 139

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

# 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 stor-

age 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).

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

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

### 8.1 Control parameters

**Occupational Exposure Limits** 

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Dearom. Mineral spirits 140 - 220	Not As- signed	TWA	1.050 mg/m3	EU HSPA

# **Biological occupational exposure limits**

Substance name	CAS-No.	Control parameters	Sampling time	Basis
n-Hexane	110-54-3	2,5-hexanedione:	At the end of the	ES VLB
		0,2 mg/l	work week	
		(Urine)		

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

Substance name	End Use	Exposure routes	Potential health effects	Value
ShellSol 140/165 (ShellSol D25)	Workers	Dermal	Long-term systemic effects	208 mg/kg bw/day
ShellSol 140/165 (ShellSol D25)	Workers	Inhalation	Long-term systemic effects	871 mg/m3
ShellSol 140/165 (ShellSol D25)	Consumers	Dermal	Long-term systemic effects	125 mg/kg bw/day
ShellSol 140/165 (ShellSol D25)	Consumers	Inhalation	Long-term systemic effects	185 mg/m3
ShellSol 140/165 (ShellSol D25)	Consumers	Oral	Long-term systemic effects	125 mg/kg bw/day

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

Substance name		Environmental Compartment	Value
Remarks:	tion. Conv	e is a hydrocarbon with a complex, unknown or entional methods of deriving PNECs are not a le to identify a single representative PNEC for	opropriate and it is

### 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 guidelines/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.

Define procedures for safe handling and maintenance of controls.

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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 moisturizer is recommended.

Skin and body protection

Skin protection is not required under normal conditions of

use.

For prolonged or repeated exposures use impervious clothing

over parts of the body subject to exposure.

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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 : Paraffinic

Odour Threshold : Data not available

Melting point/freezing point : < -30 °C

Boiling point/boiling range : Typical 143 - 160 °C

Flammability

Flammability (solid, gas) : Not applicable

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / : upper flammability limit

upper flammability limit 6 %(V)

Lower explosion limit / : Lower flammability limit

Lower flammability limit 0,8 %(V)

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

# ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Flash point : Typical 27 °C

Method: IP 170

Auto-ignition temperature : 287 °C

Method: ASTM E-659

pH : Not applicable

Viscosity

Viscosity, kinematic : Typical 0,91 mm2/s (25 °C)

Method: ASTM D445

Solubility(ies)

Water solubility : immiscible

Partition coefficient: n-

octanol/water

log Pow: estimated value(s) 4 - 5,7

Vapour pressure : Typical 10 hPa (20 °C)

Typical 3 hPa (0 °C)

Typical 30 hPa (50 °C)

Relative density : Data not available

Density : Typical 750 kg/m3 (15 °C)

Method: ASTM D4052

Relative vapour density : 4,6

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosive properties : Not applicable

Oxidizing properties : Data not available

Evaporation rate : 20

Method: DIN 53170, di-ethyl ether=1

0,56

Method: ASTM D 3539, nBuAc=1

Conductivity : Typical 0,07 pS/m at 20 °C

Method: ASTM D-4308

Low conductivity: < 100 pS/m

The conductivity of this material makes it a static accumula-

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

tor., 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 : Typical 22,2 mN/m, 20 °C, ASTM D-971

Molecular weight : 130 g/mol

# **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

Information on likely routes of : Exposure may occur via inhalation, ingestion, skin absorption,

exposure skin or eye contact, and accidental ingestion.

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

# ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

### **Acute toxicity**

**Product:** 

Acute oral toxicity : LD 50 (Rat, male and female): > 5.000 mg/kg

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

401

Remarks: Based on available data, the classification criteria

are not met.

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 (Rat, 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.

#### **Components:**

### Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Acute oral toxicity : LD 50 (Rat, male and female): > 5.000 mg/kg

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

401

Remarks: Based on available data, the classification criteria

are not met.

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 (Rat, 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.

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

# ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### Skin corrosion/irritation

**Product:** 

Species : Rabbit

Method : Test(s) equivalent or similar to OECD Test Guideline 404 Remarks : Moderately irritating to skin (but insufficient to classify).

Prolonged/repeated contact may cause defatting of the skin

which can lead to dermatitis.

#### **Components:**

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Species : Rabbit

Method : Test(s) equivalent or similar to OECD Test Guideline 404 Remarks : Moderately irritating to skin (but insufficient to classify).

Prolonged/repeated contact may cause defatting of the skin

which can lead to dermatitis.

#### Serious eye damage/eye irritation

**Product:** 

Species : Rabbit

Method : OECD Test Guideline 405

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

#### **Components:**

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Species : Rabbit

Method : OECD Test Guideline 405

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

# Respiratory or skin sensitisation

**Product:** 

Species : Guinea pig

Method : OECD Test Guideline 406

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

#### **Components:**

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Species : Guinea pig

Method : OECD Test Guideline 406

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

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

### Germ cell mutagenicity

#### **Product:**

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: Mouse

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

474

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.

# **Components:**

### Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% 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: Mouse

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

474

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.

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

# Carcinogenicity

**Product:** 

Species : Rat, male and female

Application Route : Inhalation

Method : Test(s) equivalent or similar to OECD Test Guideline 453
Remarks : Weight of evidence does not support classification as a car-

cinogen

Tumours produced in animals are not considered relevant to

humans.

Not a carcinogen.

Species : Mouse, male and female

Application Route : Inhalation

Method : Test(s) equivalent or similar to OECD Test Guideline 453
Remarks : Weight of evidence does not support classification as a car-

cinogen

Tumours produced in animals are not considered relevant to

humans.

Not a carcinogen.

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

#### **Components:**

### Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Species : Rat, male and female

Application Route : Inhalation

Method : Test(s) equivalent or similar to OECD Test Guideline 453
Remarks : Weight of evidence does not support classification as a car-

cinogen

Tumours produced in animals are not considered relevant to

humans.

Not a carcinogen.

Species : Mouse, male and female

Application Route : Inhalation

Method : Test(s) equivalent or similar to OECD Test Guideline 453
Remarks : Weight of evidence does not support classification as a car-

cinogen

Tumours produced in animals are not considered relevant to

humans.

Not a carcinogen.

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
Hydrocarbons, C9-C10, n-	No carcinogenicity classification.

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

# ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

alkanes, isoalkanes, cyclics, < 2% aromatics	
n-Hexane	No carcinogenicity classification.

# Reproductive toxicity

**Product:** 

Effects on fertility : Species: Rat

Sex: male and female Application Route: Oral

Method: OECD Test Guideline 415

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.

### **Components:**

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Effects on fertility : Species: Rat

Sex: male and female Application Route: Oral

Method: OECD Test Guideline 415

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

**Product:** 

Exposure routes : Inhalation

Target Organs : Central nervous system

Remarks : May cause drowsiness or dizziness.

# **Components:**

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Exposure routes : Inhalation

Target Organs : Central nervous system

Remarks : May cause drowsiness or dizziness.

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

### STOT - repeated exposure

**Product:** 

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

Kidney: caused kidney effects in male rats which are not con-

sidered relevant to humans

## **Components:**

### Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

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

Kidney: caused kidney effects in male rats which are not con-

sidered relevant to humans

#### Repeated dose toxicity

**Product:** 

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

Species : Rat, male and female

Application Route : Inhalation Test atmosphere : vapour

Method : Test(s) equivalent or similar to OECD Test Guideline 413

Target Organs : No specific target organs noted

## **Components:**

# Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% 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

Species : Rat, male and female

Application Route : Inhalation Test atmosphere : vapour

Method : Test(s) equivalent or similar to OECD Test Guideline 413

Target Organs : No specific target organs noted

# **Aspiration toxicity**

#### **Product:**

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

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

# **Components:**

### Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% 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 : Classifications by other authorities under varying regulatory

frameworks may exist.

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-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

# **SECTION 12: Ecological information**

# 12.1 Toxicity

#### **Product:**

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 10 -< 30 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Remarks: Harmful

LL/EL/IL50 > 10 <= 100 mg/l

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): 22 - 46 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Remarks: Harmful

LL/EL/IL50 > 10 <= 100 mg/l

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

# ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

19.02.2024 800001006178 Print Date 26.02.2024 3.5

Toxicity to algae/aquatic plants EL50 (Pseudokirchneriella subcapitata (algae)): > 1.000 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201 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

Toxicity to microorganisms

Remarks: Data not available

#### **Components:**

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Toxicity to fish LL50 (Oncorhynchus mykiss (rainbow trout)): > 10 -< 30 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Remarks: Harmful

LL/EL/IL50 > 10 <= 100 mg/l

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): 22 - 46 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Remarks: Harmful

LL/EL/IL50 > 10 <= 100 mg/l

EL50 (Pseudokirchneriella subcapitata (algae)): > 1.000 mg/l Toxicity to algae/aquatic plants

Exposure time: 72 h

Method: OECD Test Guideline 201 Remarks: Practically non toxic: LC/EC/IC50 > 100 mg/l

Toxicity to microorganisms

Remarks: Data not available

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other : aquatic invertebrates (Chron-

Remarks: Data not available

ic toxicity)

### 12.2 Persistence and degradability

**Product:** 

Biodegradability Biodegradation: 89 %

Exposure time: 28 d

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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

Oxidises rapidly by photo-chemical reactions in air.

#### **Components:**

#### Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Biodegradability : Biodegradation: 89 %

Exposure time: 28 d

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

Oxidises rapidly by photo-chemical reactions in air.

### 12.3 Bioaccumulative potential

### **Product:**

Bioaccumulation : Remarks: Has the potential to bioaccumulate.

#### **Components:**

### Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Bioaccumulation : Remarks: Has the potential to bioaccumulate.

### 12.4 Mobility in soil

# Product:

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

particles and will not be mobile.

### **Components:**

### Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

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

particles and will not be mobile.

#### 12.5 Results of PBT and vPvB assessment

#### **Product:**

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..

### **Components:**

# Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% 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..

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

### 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

Physical properties indicate that substance will rapidly volatilize from aquatic environment and that acute and chronic effects would

not be observed in practice.

Does not have ozone depletion potential.

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

#### Components:

#### Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Additional ecological information

Physical properties indicate that substance will rapidly volatilize from aquatic environment and that acute and chronic effects would

not be observed in practice.

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 methods.

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.

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.

Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional,

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

# ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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.

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
Hazard Identification Number : 30
Labels : 3

**RID** 

Packing group : III Classification Code : F1

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

# ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Hazard Identification Number : 30 Labels 3

**IMDG** 

Packing group Ш Labels 3

**IATA** 

Packing group : III : 3 Labels

# 14.5 Environmental hazards

Environmentally hazardous : no

**RID** 

Environmentally hazardous no

**IMDG** 

Marine pollutant no

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 enriched atmospheres displaces available oxygen which 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 - List of substances subject to authorisation (Annex XIV)

Product is not subject to Authorisation under REACH.

REACH - Candidate List of Substances of Very High

Concern for Authorisation (Article 59).

This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH),

Article 57).

: Volatile organic compounds (VOC) content: 100 % Volatile organic compounds

#### Other regulations:

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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

Product is subject to EI Real Decreto 840/2015, measures to control the risks inherent in serious accidents involving hazardous substances based on Seveso III directive (2012/18/EU).

The national inventory is based on the CAS number 64742-49-0.

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

DSL : Listed

IECSC : Listed

KECI : Listed

TSCA : Listed

TCSI : Listed

ENCS : Listed

NZIoC : Listed

PICCS : Listed

# 15.2 Chemical safety assessment

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

# **SECTION 16: Other information**

#### Full text of other abbreviations

ES VLB : Occupational Exposure Limits for Chemical Agents in Spain -

Biological Exposure Values

EU HSPA : OEL based on European Hydrocarbon Solvents Producers

(CEFIC-HSPA) methodology.

EU HSPA / TWA : 8-hr TWA

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

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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

### **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 : The quoted data are from, but not limited to, one or more

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

# ShellSol 140/165

SDS Number: Date of last issue: 12.12.2023 Version **Revision Date:** 

3.5 19.02.2024 800001006178 Print Date 26.02.2024

compile the Safety Data sources of information (e.g. toxicological data from Shell Sheet

Health Services, material suppliers' data, CONCAWE, EU

IUCLID date base, EC 1272 regulation, etc).

Classification of the mixture: Classification procedure:

Flam. Liq. 3 H226 On basis of test data.

Asp. Tox. 1 H304 Expert judgement and weight of evi-

dence determination.

STOT SE 3 H336 Expert judgement and weight of evi-

dence determination.

Aquatic Chronic 3 H412 Expert judgement and weight of evi-

dence determination.

Identified Uses according to the Use Descriptor System

**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 **Functional Fluids** 

- Industrial

**Uses - Worker** 

Title **Functional Fluids** 

- Professional

**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 140/165

Version Revision Date: 3.5 19.02.2024

SDS Number: 800001006178

Date of last issue: 12.12.2023

Print Date 26.02.2024

- Industrial

**Uses - Worker** 

Title : Use as binders and release agents

- Professional

**Uses - Worker** 

Title : Use as a fuel

- Industrial

**Uses - Worker** 

Title : Use as a fuel

- Professional

**Uses - Worker** 

Title : Lubricants

- Professional

High Environmental Release

**Uses - Worker** 

Title : Lubricants

- Professional

Low Environmental Release

Uses - Worker

Title : Lubricants

- Industrial

**Uses - Worker** 

Title : Use in Cleaning Agents

- Professional

**Uses - Worker** 

Title : Use in Cleaning Agents

- Industrial

**Uses - Worker** 

Title : Uses in Coatings

- Professional

**Uses - Worker** 

Title : Uses in Coatings

- Industrial

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

# ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Uses - Worker** 

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

- Industrial

**Uses - Worker** 

Title : Distribution of substance

- Industrial

Uses - Worker

Title : Manufacture of substance

- Industrial

**Uses - Worker** 

Title : Rubber production and processing

- Industrial

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 : 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

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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.

ES / EN

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure Scenario - Worker			
30000000912			
SECTION 1	EXPOSURE SCENARIO TITLE		
Title	Road and construction applications- Professional		
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13 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	•
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Sub- stance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of	·
	8 hours (unless stated differently).
Other Operational Conditio	
	in 20°C above ambient temperature (unless stated differently).
	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 temperature).PROC8b	No other specific measures identified.
Small scale weigh- ingPROC9	No other specific measures identified.
ManualRolling, Brush- ingPROC10	No other specific measures identified.
Spraying/ fogging by machine applicationOperation is carried out at elevated temperature (> 20°C above ambient tempera-	Provide a good standard of controlled ventilation (10 to 15 air changes per hour).  Avoid carrying out activities involving exposure for more than 4 hours  Wear suitable gloves tested to EN374.

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

ture).PROC11	Other skin protection measures such as face shields may be required during high which are likely to lead to substantial aer spraying.	dispersion activities		
Spraying/ fogging by machine applicationPROC11	Provide a good standard of controlled ventilation (10 to 15 air changes per hour).  Avoid carrying out activities involving exposure for more than 4 hours  Wear suitable gloves tested to EN374.  Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.			
Dipping, immersion and pouringPROC13	No other specific measures identified.			
Drum and small package fillingPROC9	No other specific measures identified.			
Equipment cleaning and maintenancePROC8a	No other specific measures identified.			
Section 2.2	Control of Environmental Exposure			
Substance is complex UVCB				
Predominantly hydrophobic.				
Amounts Used				
Fraction of EU tonnage used	in region:	0,1		
Regional use tonnage (tonne		4		
Fraction of Regional tonnage used locally:		5,0E-04		
Annual site tonnage (tonnes/year):		2,0E-03		
Maximum daily site tonnage (kg/day):		5,5E-03		
Frequency and Duration of				
Continuous release.				
Emission Days (days/year):	365			
<b>Environmental factors not</b>	influenced by risk management			
Local freshwater dilution fact	or:	10		
Local marine water dilution fa	actor:	100		
Other Operational Condition	ns affecting Environmental Exposure			
Release fraction to air from w	vide dispersive use (regional only):	0,95		
Release fraction to wastewat	0,01			
Release fraction to soil from	wide dispersive use (regional only):	0,04		
Technical conditions and measures at process level (source) to prevent release				
	ss sites thus conservative process re-			
lease estimates used.				
Technical onsite conditions sions and releases to soil	s and measures to reduce or limit disch	arges, air emis-		
Risk from environmental exposure is driven by freshwater.				
No wastewater treatment required.				
Treat air emission to provide	0			
	or to receiving water discharge) to provide	0		
	wage treatment plant, provide the re-	0		
		<u> </u>		

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

# ShellSol 140/165

SDS Number: Date of last issue: 12.12.2023 Version Revision Date:

3.5 19.02.2024 800001006178 Print Date 26.02.2024

quired onsite wastewater removal efficiency of (%)	
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 (%)	96,4
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	8,8
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.	
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
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### Section 3.1 - Health

The ECETOC TRA Version 3 tool has been used to estimate workplace exposures unless otherwise indicated

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

#### **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	

# 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.

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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/en/reach-for-industries-libraries.html).

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure occitatio - W	01101
30000000920	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC15 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			
Product Characteristics				
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP			
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,			
Frequency and Duration of	Use			
Covers daily exposures up to	Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Condition	ns 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			
Laboratory activi- tiesPROC15	No other specific measures identified.			
Section 2.2	Control of Environmental Exposure			
Substance is complex UVCB.				
Predominantly hydrophobic.				
Amounts Used				
Fraction of EU tonnage used in region:		0,1		
Regional use tonnage (tonnes/year):		0,01		
Fraction of Regional tonnage used locally:		1		
Annual site tonnage (tonnes/year):		0,01		
Maximum daily site tonnage (kg/day):		0,5		
Frequency and Duration of	Use			
Continuous release.				
Emission Days (days/year):		20		
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 process (initial release prior to RMM):		0,025		
Release fraction to wastewate RMM):	0,02			

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Release fraction to soil from process (initial release prior to RMM):	1E-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 discharge	arges, air emis-
sions and releases to soil	
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	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
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 (%)	96,4
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4
Maximum allowable site tonnage (MSafe) based on release following	230
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
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 regiona
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regions
regulations.	iodai aria/or regiona
ogaidanti.	

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

# other wide 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	

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

30000000921	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC15 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 F	RISK MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa a	t STP
Concentration of the Sub-	Covers percentage substance in the p	roduct up to 100%.,
stance in Mixture/Article	Unless stated otherwise.,	
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Condition		
	an 20°C above ambient temperature (un ard of occupational hygiene is implemer	
Contributing Scenarios	Risk Management Measures	
Laboratory activitiesPROC15	No other specific measures identified.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region: 0,1		0,1
Regional use tonnage (tonne	s/year):	0,01
Fraction of Regional tonnage used locally:		5,0E-04
Annual site tonnage (tonnes/		5,0E-06
Maximum daily site tonnage	(kg/day):	1,4E-05
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
	influenced by risk management	
Local freshwater dilution factor	or:	10
Local marine water dilution factor: 100		L
	ns affecting Environmental Exposure	<u> </u>
	vide dispersive use (regional only):	0,5
Release fraction to wastewater from wide dispersive use: 0,5		0,5

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Release fraction to soil from wide dispersive use (regional only):	0
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	<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 the required removal efficiency of >= (%)	0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%)	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 (%)	96,4
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	2,2E-03
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.	
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 Version 3 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.	

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

30000000904	
30000000904	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Functional Fluids- Industrial
Use Descriptor	Sector of Use: SU3
_	Process Categories: PROC1, PROC2, PROC3, PROC4,
	PROC8a, PROC8b, PROC9
	Environmental Release Categories: ERC7, ESVOC SpERC
	7.13a.v1
	7.13d.V1
Scope of process	Lies as functional fluids a greable ails transfer ails contents
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 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of	
Covers daily exposures up to	8 hours (unless stated differently).
Other Operational Conditio	
	in 20°C above ambient temperature (unless stated differently).
	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- tems)PROC9	No other specific measures identified.
Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a	No other specific measures identified.
General exposures (closed systems)PROC2PROC3	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
General exposures (open systems)elevated temperaturePROC4	No other specific measures identified.
Remanufacture of reject	No other specific measures identified.

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

articlesPROC9  Equipment maintenance-PROC8a  Storage.PROC1PROC2  Store substance within a closed system.  Section 2.2  Control of Environmental Exposure  Substance is complex UVCB.  Predominantly hydrophobic.  Amounts Used  Fraction of EU tonnage used in region:  Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  20  Environmental factors not influenced by risk management	
Storage.PROC1PROC2 Store substance within a closed system.  Section 2.2 Control of Environmental Exposure  Substance is complex UVCB.  Predominantly hydrophobic.  Amounts Used  Fraction of EU tonnage used in region: 0,1  Regional use tonnage (tonnes/year): 10  Fraction of Regional tonnage used locally: 1  Annual site tonnage (tonnes/year): 10  Maximum daily site tonnage (kg/day): 500  Frequency and Duration of Use  Continuous release.  Emission Days (days/year): 20	
Section 2.2 Control of Environmental Exposure  Substance is complex UVCB.  Predominantly hydrophobic.  Amounts Used  Fraction of EU tonnage used in region: 0,1  Regional use tonnage (tonnes/year): 10  Fraction of Regional tonnage used locally: 1  Annual site tonnage (tonnes/year): 10  Maximum daily site tonnage (kg/day): 500  Frequency and Duration of Use  Continuous release.  Emission Days (days/year): 20	
Substance is complex UVCB.  Predominantly hydrophobic.  Amounts Used  Fraction of EU tonnage used in region: 0,1  Regional use tonnage (tonnes/year): 10  Fraction of Regional tonnage used locally: 1  Annual site tonnage (tonnes/year): 10  Maximum daily site tonnage (kg/day): 500  Frequency and Duration of Use  Continuous release.  Emission Days (days/year): 20	
Predominantly hydrophobic.  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):  20	
Predominantly hydrophobic.  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):  20	
Amounts UsedFraction of EU tonnage used in region:0,1Regional use tonnage (tonnes/year):10Fraction of Regional tonnage used locally:1Annual site tonnage (tonnes/year):10Maximum daily site tonnage (kg/day):500Frequency and Duration of UseContinuous release.Emission Days (days/year):	
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):  0,1  10  500  Frequency and Duration of Use  Continuous release.	
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):  10  500  Frequency and Duration of Use	
Fraction of Regional tonnage used locally:  Annual site tonnage (tonnes/year):  Maximum daily site tonnage (kg/day):  500  Frequency and Duration of Use  Continuous release.  Emission Days (days/year):  20	
Annual site tonnage (tonnes/year): 10  Maximum daily site tonnage (kg/day): 500  Frequency and Duration of Use  Continuous release.  Emission Days (days/year): 20	
Maximum daily site tonnage (kg/day): 500  Frequency and Duration of Use  Continuous release.  Emission Days (days/year): 20	
Frequency and Duration of Use Continuous release. Emission Days (days/year): 20	
Continuous release.  Emission Days (days/year):  20	
Emission Days (days/year): 20	
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 1,0E-06	
RMM):	
Release fraction to soil from process (initial release prior to RMM): 1,0E-03	
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emis-	
sions and releases to soil	
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 (%)	
Treat onsite wastewater (prior to receiving water discharge) to provide 0	
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	
quired onsite wastewater removal efficiency of (%)	
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 plant	
Estimated substance removal from wastewater via domestic sewage 96,4	
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite 96,4	
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following 7,5E+05 total wastewater treatment removal (kg/d)	

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

#### ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Assumed domestic sewage treatment plant flow (m3/d) 2.

#### 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 Version 3 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 140/165**

Date of last issue: 12.12.2023 Version Revision Date: SDS Number:

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

30000000905	
30000000000	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Functional Fluids- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC8a, PROC9, PROC20 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 RIS MEASURES	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at S	TP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the prod Unless stated otherwise.,	luct up to 100%.,
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.		

Assumes a good basic standard of occupational riggiene is implemented.		
Contributing Scenarios	Risk Management Measures	
Drum/batch transfersPROC8a	No other specific measures identified.	
Transfer from/pouring from con tainersPROC9	- No other specific measures identified.	
Filling/ preparation of equipmer from drums or containers.PROC9	No other specific measures identified.	
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified. 3	
Operation of equipment contair ing engine oils and similar.(closed systems)PROC20	No other specific measures identified.	
Operation of equipment containing engine oils and similar. (closed systems) Operation is carried out at elevated temperature (> 20°C above ambient temperature). PROC20	s	
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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

Equipment maintenance- PROC8a	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 UVCE	3.	
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region:		0,1
Regional use tonnage (tonne		10
Fraction of Regional tonnage	e used locally:	5,0E-04
Annual site tonnage (tonnes	/year):	5,0E-03
Maximum daily site tonnage	(kg/day):	0,014
Frequency and Duration of	f Use	
Continuous release.		
Emission Days (days/year):		365
<b>Environmental factors not</b>	influenced by risk management	
Local freshwater dilution fact	tor:	10
Local marine water dilution fa	actor:	100
	ons affecting Environmental Exposure	
	wide dispersive use (regional only):	0,05
	ter from wide dispersive use:	0,025
Release fraction to soil from wide dispersive use (regional only): 0,025		
	neasures at process level (source) to pro	event release
	oss sites thus conservative process re-	
lease estimates used.		
sions and releases to soil	s and measures to reduce or limit discha	arges, air emis-
Risk from environmental evo	osure is driven by freshwater.	
	•	
No wastewater treatment red	quired.	
No wastewater treatment red Treat air emission to provide	quired. a typical removal efficiency of (%)	0
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prid	quired. a typical removal efficiency of (%) or to receiving water discharge) to provide	0
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prid the required removal efficien	quired.  a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%)	0
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prior the required removal efficien If discharging to domestic se	quired.  e a typical removal efficiency of (%)  or to receiving water discharge) to provide acy of >= (%)  ewage treatment plant, provide the re-	
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prion the required removal efficien If discharging to domestic se quired onsite wastewater rer	quired.  a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%) ewage treatment plant, provide the removal efficiency of (%)	0
No wastewater treatment rec Treat air emission to provide Treat onsite wastewater (priot the required removal efficien If discharging to domestic se quired onsite wastewater rer Organisational measures t	quired. e a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%) ewage treatment plant, provide the removal efficiency of (%) o prevent/limit release from site	0
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (priot the required removal efficien If discharging to domestic se quired onsite wastewater rer	quired. e a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%) ewage treatment plant, provide the removal efficiency of (%) o prevent/limit release from site	0
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prio the required removal efficien If discharging to domestic se quired onsite wastewater rer Organisational measures t Do not apply industrial sludg	quired.  e a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%) ewage treatment plant, provide the removal efficiency of (%) o prevent/limit release from site e to natural soils.	0
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prio the required removal efficien If discharging to domestic se quired onsite wastewater rer Organisational measures t Do not apply industrial sludg Sludge should be incinerated	quired.  a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%) ewage treatment plant, provide the removal efficiency of (%) o prevent/limit release from site e to natural soils.  d, contained or reclaimed.  related to municipal sewage treatment p	0 0
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prio the required removal efficien If discharging to domestic se quired onsite wastewater rer Organisational measures t Do not apply industrial sludg Sludge should be incinerated Conditions and Measures Estimated substance remova	quired.  a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%) ewage treatment plant, provide the removal efficiency of (%) o prevent/limit release from site e to natural soils.  d, contained or reclaimed.	0
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prio the required removal efficien If discharging to domestic se quired onsite wastewater rer Organisational measures t Do not apply industrial sludg Sludge should be incinerated Conditions and Measures Estimated substance removate	quired.  a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%) ewage treatment plant, provide the removal efficiency of (%) o prevent/limit release from site e to natural soils.  d, contained or reclaimed.  related to municipal sewage treatment plant from wastewater via domestic sewage	0 0 lant 96,4
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (pricthe required removal efficient If discharging to domestic sequired onsite wastewater red Organisational measures to Do not apply industrial sludg Sludge should be incinerated Conditions and Measures Estimated substance removated treatment (%)	quired.  a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%) ewage treatment plant, provide the removal efficiency of (%) o prevent/limit release from site e to natural soils.  d, contained or reclaimed.  related to municipal sewage treatment peal from wastewater via domestic sewage om wastewater after onsite and offsite	0 0
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prio the required removal efficien If discharging to domestic se quired onsite wastewater rer Organisational measures t Do not apply industrial sludg Sludge should be incinerated Conditions and Measures Estimated substance remova treatment (%) Total efficiency of removal fr (domestic treatment plant) R	quired.  a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%) ewage treatment plant, provide the removal efficiency of (%) o prevent/limit release from site e to natural soils.  d, contained or reclaimed.  related to municipal sewage treatment peal from wastewater via domestic sewage om wastewater after onsite and offsite MMs (%)	0 0 lant 96,4 96,4
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (prid the required removal efficient of discharging to domestic sequired onsite wastewater red Corganisational measures to Do not apply industrial sludg Sludge should be incinerated Estimated substance removate treatment (%)  Total efficiency of removal front (domestic treatment plant) Residual maximum allowable site tonrowide.	quired.  a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%) ewage treatment plant, provide the removal efficiency of (%) o prevent/limit release from site e to natural soils.  d, contained or reclaimed.  related to municipal sewage treatment peal from wastewater via domestic sewage om wastewater after onsite and offsite MMs (%) hage (MSafe) based on release following	0 0 lant 96,4
No wastewater treatment red Treat air emission to provide Treat onsite wastewater (priother required removal efficient of discharging to domestic sequired onsite wastewater removal efficient Do not apply industrial sludg Sludge should be incinerated Stimuted substance removal freatment (%)  Total efficiency of removal freatment plant) R Maximum allowable site ton total wastewater treatment red	quired.  a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%) ewage treatment plant, provide the removal efficiency of (%) o prevent/limit release from site e to natural soils.  d, contained or reclaimed.  related to municipal sewage treatment plant from wastewater via domestic sewage om wastewater after onsite and offsite MMs (%) hage (MSafe) based on release following emoval (kg/d)	0 0 0 lant 96,4 96,4
No wastewater treatment red Treat air emission to provide Treat air emission to provide Treat onsite wastewater (prid the required removal efficien If discharging to domestic sequired onsite wastewater rer Organisational measures to Do not apply industrial sludg Sludge should be incinerated Sludge should be incinerated Estimated substance removatreatment (%)  Total efficiency of removal from (domestic treatment plant) Resumment allowable site ton total wastewater treatment red Assumed domestic sewage in the provide site of the same of the s	quired.  a typical removal efficiency of (%) or to receiving water discharge) to provide acy of >= (%) ewage treatment plant, provide the removal efficiency of (%) o prevent/limit release from site e to natural soils.  d, contained or reclaimed.  related to municipal sewage treatment plant from wastewater via domestic sewage om wastewater after onsite and offsite MMs (%) hage (MSafe) based on release following emoval (kg/d)	0 0 0 lant 96,4 96,4 20 2.000

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

### ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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	<b>EXPOSURE ESTIMATION</b>
3201013	LAI OSONE ESTIMATION

#### Section 3.1 - Health

The ECETOC TRA Version 3 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 140/165**

Date of last issue: 12.12.2023 Version Revision Date: SDS Number:

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure Scenario - Worker	
30000000894	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Metal working fluids / rolling oils- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17 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 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
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 N	Management Measures	
General exposures (closed sy tems)PROC1PROC2PROC3	/S-	No other specific measures identified.	
General exposures (open sys tems)PROC4	-	No other specific measures identified.	
Bulk transfersDedicated facili- tyPROC8b	-	No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.PROC5PROC8bPROC9	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 pouringPROC13	ır-	No other specific measures identified.	

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

SprayingPROC7	Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
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	No other specific measures identified.
Equipment cleaning and maintenanceDedicated facilityPROC8b	No other specific measures identified.
Equipment cleaning and mainte- nanceNon-dedicated facili- tyPROC8a	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.			
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonnes	s/year):	1	
Fraction of Regional tonnage	used locally:	1	
Annual site tonnage (tonnes/	year):	1	
Maximum daily site tonnage (	kg/day):	50	
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 factor:		100	
Other Operational Conditions affecting Environmental Exposure			
Release fraction to air from process (initial release prior to RMM):		2,0E-02	
Release fraction to wastewater from process (initial release prior to RMM):		1,0E-06	
Release fraction to soil from process (initial release prior to RMM):		0	
Technical conditions and m	neasures at process level (source) to p	revent release	
Common practices vary across sites thus conservative process re-			
lease estimates used.			
Technical onsite conditions and measures to reduce or limit discharges, air emis-			
sions and releases to soil			
	Risk from environmental exposure is driven by freshwater.		
Prevent discharge of undissolved substance to or recover from onsite			
wastewater.			

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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 the required removal efficiency of >= (%)	0
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%)	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 (%)	96,4
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	8,0E+04
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable regulations.	local and/or regional
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 Version 3 tool has been used to estimate workplace exposures unless otherwise indicated

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

#### **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

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

30000000895	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Metal working fluids / rolling oils- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.7c.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 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
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 Managem		nent Measures	
General exposures (closed systems)PROC1PROC2PROC3		No other specific measures identified.	
Bulk transfersPROC8b		No other specific measures identified.	
Filling/ preparation of equipment from drums or contain- ers.PROC5PROC8aPROC8bPROC9		No other specific measures identified.	
Process samplingPROC8b		No other specific measures identified.	
Metal machining operationsPROC17		Provide a good standard of controlled ventilation (10 to 15 air changes per hour).	ı
ManualRolling, BrushingPRO	C10	No other specific measures identified.	
SprayingIndoorPROC11		Provide a good standard of controlled ventilation (10 to 15 air changes per hour).	í

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

Section 2.2	Control of En	vironmental Exposure
Storage.PROC1PROC2		Store substance within a closed system.
Equipment cleaning and maintenanceDedicated facilityPROC8b		No other specific measures identified.
Equipment cleaning and maintenanceNon-dedicated facilityPROC8a		No other specific measures identified.
Treatment by dipping and pouringPROC13		No other specific measures identified.
SprayingOutdoorPROC11		Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure fo more than 1 hour. Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
		Avoid carrying out activities involving exposure for more than 4 hours Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	0,5
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	year):	2,5E-04
Maximum daily site tonnage (	(kg/day):	6,8E-04
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
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from wide dispersive use (regional only):		0,15
Release fraction to wastewater from wide dispersive use:		0,05
Release fraction to soil from wide dispersive use (regional only):		0,05
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 discharges, air emis-		
sions and releases to soil		
Risk from environmental exposure is driven by freshwater.		
No wastewater treatment required.		

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

	_
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, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
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	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	2,2
total wastewater treatment removal (kg/d)	,
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable	
regulations.	J
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	3
g	

SECTION 3	EXPOSURE ESTIMATION

#### Section 3.1 - Health

The ECETOC TRA Version 3 tool has been used to estimate workplace exposures unless otherwise indicated

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

### 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 4.4 Houlth	

#### 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

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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 140/165**

Date of last issue: 12.12.2023 Version Revision Date: SDS Number:

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure occitatio - Worker		
30000000899		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use as binders and release agents- Industrial	
Use Descriptor	Sector of Use: SU3	
	Process Categories: PROC1, PROC2, PROC3, PROC4,	
	PROC6, PROC8a, PROC8b, PROC10, PROC13, PROC14	
	Environmental Release Categories: ERC4, ESVOC SpERC	
	4.10a.v1	
	11704171	
Scope of process	Covers the use as binders and release agents including ma-	
, ,	terial transfers, mixing, application (including spraying and	
	brushing), mould forming and casting, and handling of waste.	
	2. doining, modes roming and odding, and narraing or water	

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 percentage substance in the product up to 100%., Unless stated otherwise.,		
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
Material transfersUse in con-	No other specific measures identified.
tained sys-	
temsPROC1PROC2PROC3	
Drum/batch transfersDedicated	No other specific measures identified.
facilityPROC8b	
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-	No other specific measures identified.
tems)Operation is carried out a	t
elevated temperature (> 20°C	
above ambient tempera-	
ture). Aerosol generation due to	
elevated process temperature-	
PROC6	
SprayingMachinePROC7	Provide a good standard of controlled ventilation (10 to 15 air

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

changes per hour).

ManualRolling, Brush- ingPROC10	No other specific measures identified	
Dipping, immersion and pouringPROC13	No other specific measures identified	
Equipment cleaning and maintenancePROC8a	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.		
Amounts Used		
Fraction of EU tonnage used in r		0,1
Regional use tonnage (tonnes/ye		43
Fraction of Regional tonnage use		1
Annual site tonnage (tonnes/yea		43
Maximum daily site tonnage (kg/		2,200
Frequency and Duration of Use	9	
Continuous release.		
Emission Days (days/year):		20
Environmental factors not influ	uenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution facto		100
	affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):		0,2
RMM):	om process (initial release prior to	1,0E-07
	cess (initial release prior to RMM):	0
	sures at process level (source) to pro	event release
lease estimates used.	ites thus conservative process re-	
	d measures to reduce or limit discha	arges, air emis-
sions and releases to soil		
Risk from environmental exposu		
· ·	d substance to or recover from onsite	
wastewater.		
No wastewater treatment require	d.	
Treat air emission to provide a ty	pical removal efficiency of (%)	80
	receiving water discharge) to provide	0
the required removal efficiency o		
quired onsite wastewater remova	e treatment plant, provide the re-	0
Organisational measures to pr	•	
Do not apply industrial sludge to		
Sludge should be incinerated, co	ntained or reclaimed.	
Conditions and Measures relat	ed to municipal sewage treatment p	lant
	m wastewater via domestic sewage	96,4
		, , ,

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

### ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	3,3E+06
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000

#### 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 Version 3 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.

	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Continu 4.4 Hookk	

#### 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 140/165**

Date of last issue: 12.12.2023 Version Revision Date: SDS Number:

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure Scenario - Worker	
30000000900	
OF OTION 4	EVECOURE COENARIO TITLE
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as binders and release agents- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC6, PROC8a, PROC8b, PROC10, PROC11, PROC14 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 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
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
Material transfers(closed systems)PROC1PROC2PROC3	No other specific measures identified.
Drum/batch transfer- sPROC8aPROC8b	No other specific measures identified.
Mixing operations (closed sys tems)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 elevated temperature (> 20°C above ambient temperature).PROC6	at changes per hour).

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	Avoid carrying out activities involving 4 hours Wear suitable gloves tested to EN3. Other skin protection measures such face shields may be required during which are likely to lead to substantial spraying.	74. h as impervious suits and high dispersion activities
ManualRolling, Brush-ingPROC10	No other specific measures identifie	d.
Storage.PROC1PROC2	Store substance within a closed sys	tem.
Section 2.2	ontrol of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in r	egion:	0,1
Regional use tonnage (tonnes/ye		20
Fraction of Regional tonnage use	ed locally:	5,0E-04
Annual site tonnage (tonnes/yea	r):	0,01
Maximum daily site tonnage (kg/	day):	0,027
Frequency and Duration of Us	e	
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	
		0,95
Release fraction to wastewater for		0,025
Release fraction to soil from wide dispersive use (regional only):		0,025
	sures at process level (source) to pi	revent release
	sites thus conservative process re-	
lease estimates used.		
	nd measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
Risk from environmental exposu		
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		U
the required removal efficiency of		+0
	le treatment plant, provide the re-	0
quired onsite wastewater remova		
Organisational measures to pr		
Do not apply industrial sludge to	Hatural SUIIS.	
Sludge should be incinerated, co	entained or replaimed	

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

#### ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage	96,4	
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite	96,4	
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following	37	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2.000	

#### 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 Version 3 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 140/165**

Date of last issue: 12.12.2023 Version Revision Date: SDS Number:

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure Scenario - Worker	
30000000901	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16 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 - 10 kPa at S	TP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
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 facili- tyPROC8b	No other specific measures identified.
Drum/batch transfersDedicate facilityPROC8b	No other specific measures identified.
General exposures (closed systems)PROC1PROC2PRO	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.PROC1PROC2	Store substance within a closed system.

Section 2.2	Control of Environmental Exp	osure
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	n region:	0,1
Regional use tonnage (tonnes	s/year):	30
Fraction of Regional tonnage	used locally:	1

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

Annual site tonnage (tonnes/year):	30
	1.500
Maximum daily site tonnage (kg/day):  Frequency and Duration of Use	1.500
Continuous release.	
	20
Emission Days (days/year):	20
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 0F 00
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 pro-	event release
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit dischasions 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 (%)	95
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%)	0
Organisational measures to prevent/limit release from site	<u>I</u>
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	96,4
treatment (%)	, -
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	,
Maximum allowable site tonnage (MSafe) based on release following	4,6E+05
total wastewater treatment removal (kg/d)	,
Assumed domestic sewage treatment plant flow (m3/d)	2.000
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	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 Version 3 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 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### 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 140/165**

Date of last issue: 12.12.2023 Version Revision Date: SDS Number:

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

30000000902	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16 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 RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at S	TP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
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 facili- tyPROC8b	No other specific measures identified.
Drum/batch transfersDedicate 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.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	1 00
Regional use tonnage (tonnes/year):	30
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	0,015
Maximum daily site tonnage (kg/day):	0,041
Frequency and Duration of Use	ı
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	1
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-03
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 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.	
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, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Charles about the incirculated contained or realized	
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	96,4
treatment (%)	, '
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	67
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	I .
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
This substance is consumed during use and no waste or substance is y	onorateu.

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

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

30000000893		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Lubricants- ProfessionalHigh Environmental Release	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20 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	·	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
Frequency and Duration o	f 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.		

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Risk Ma	anagement 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 equipme from drums or containers.Nor dedicated facilityPROC8a		No other specific measures identified.	
Operation and lubrication of h energy open equipmentIn- doorPROC17PROC18	igh	Provide a good standard of controlled ventilation (10 to air changes per hour).	15

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

Operation and lubrication of high energy open equipmentOut-doorPROC17PROC18	Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure 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	No other specific measures identified.	
Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facilityPROC8a	No other specific measures identified.	
Engine lubricant servicePROC9	No other specific measures identified.	
ManualRolling, BrushingPROC10	No other specific measures identified.	
SprayingPROC11	Provide a good standard of controlled ventilation (10 to 15 air changes per hour).  Avoid carrying out activities involving exposure for more than 4 hours  Wear suitable gloves tested to EN374.  Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.	
Treatment by dipping and pour-ingPROC13	No other specific measures identified.	
Storage.PROC1	Store substance within a closed system.	
	ol of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region		
Regional use tonnage (tonnes/year):	26	
Fraction of Regional tonnage used loc		
Annual site tonnage (tonnes/year):	0,013	
Maximum daily site tonnage (kg/day): 0,035  Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):	365	
Environmental factors not influence		
Local freshwater dilution factor:	10	
Local marine water dilution factor:	100	
Other Operational Conditions affect		
Release fraction to air from wide dispersive use (regional only): 0,15		
Trended medicin to an morn wide dispersive des (regional only).		

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Release fraction to wastewater from wide dispersive use:	0,05
Release fraction to soil from wide dispersive use (regional only):	0,05
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	
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, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
0 19	
Conditions and Measures related to municipal sewage treatment p	
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	52
total wastewater treatment removal (kg/d)	0.000
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	
External treatment and disposal of waste should comply with applicable	local and/or regiona
regulations.	
One PC and an Improvemental to automation of	
Conditions and measures related to external recovery of waste	1
External recovery and recycling of waste should comply with applicable	iocai and/or regiona
regulations.	

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA Version 3 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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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.

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure Scenario - Worker	
30000000892	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Lubricants- ProfessionalLow Environmental Release
Use Descriptor	Sector of Use: SU22
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.6b.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 RISI MEASURES	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at S	TP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the produ	uct up to 100%.,
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.		

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.

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 transfersDedicated facili- tyPROC8b	No other specific measures identified.
Filling/ preparation of equipment from drums or contain- ers.Dedicated facilityPROC8b	No other specific measures identified.
Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a	No other specific measures identified.
Operation and lubrication of high energy open equipmentIn-doorPROC17PROC18	Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

Operation and lubrication of high energy open equipmentOut-doorPROC17	Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure 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	No other specific measures identified.
Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facilityPROC8a	No other specific measures identified.
Engine lubricant servicePROC9	No other specific measures identified.
ManualRolling, BrushingPROC10	No other specific measures identified.
SprayingPROC11	Provide a good standard of controlled ventilation (10 to 15 air changes per hour).  Avoid carrying out activities involving exposure for more than 4 hours  Wear suitable gloves tested to EN374.  Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
Treatment by dipping and pour- ingPROC13	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.
Section 2.2 Cont	rol of Environmental Exposure
Substance is complex UVCB.	·
Predominantly hydrophobic.	
Amounts Used	
Fraction of EU tonnage used in region	
Regional use tonnage (tonnes/year)	26
Fraction of Regional tonnage used I	ocally: 5,0E-04
Annual site tonnage (tonnes/year):	0,013
Maximum daily site tonnage (kg/day	y): 0,035
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influen	,
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affe	ecting Environmental Exposure

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Release fraction to air from wide dispersive use (regional only):	0,01
Release fraction to wastewater from wide dispersive use:	0,01
Release fraction to soil from wide dispersive use (regional only):	0,01
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	
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, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
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	96,4
treatment (%)	00, .
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	52
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	r 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	local and/or regional
regulations.	-

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA Version 3 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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure Scenario - Worker		
30000000891	0000891	
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Lubricants- Industrial	
Use Descriptor	Sector of Use: SU3	
	Process Categories: PROC1, PROC2, PROC3, PROC4,	
	PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13,	
	PROC17, PROC18	
	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 - 10 kPa at STP
Concentration of the Sub-	Covers percentage substance in the product up to 100%.,
stance in Mixture/Article	Unless stated otherwise.,
Frequency and Duration of Use	
Covers daily exposures up t	o 8 hours (unless stated differently).
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature.	
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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

Manual Polling Prush	No other enecific measures identific	nd .
ManualRolling, Brush-ingPROC10	No other specific measures identific	ea.
Treatment by dipping and polingPROC13	ur- No other specific measures identific	ed.
SprayingPROC7	Provide a good standard of controll changes per hour).	led ventilation (10 to 15 a
Maintenance (of larger plant items) and machine set up-PROC8b	No other specific measures identified	ed.
Maintenance (of larger plant items) and machine set upOp eration is carried out at eleva temperature (> 20°C above ambient temperature).PROCE	red Bb	
Maintenance of small itemsN dedicated facilityPROC8a	· ·	
Remanufacture of reject articlesPROC9	No other specific measures identific	ed.
Storage.PROC1PROC2	Store substance within a closed sys	stem.
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB	-	
Predominantly hydrophobic.		
Amounts Used		•
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne		52
Fraction of Regional tonnage		1
Annual site tonnage (tonnes/	•	52
Maximum daily site tonnage (		2.600
Frequency and Duration of		•
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	ctor:	100
Other Operational Conditio	ns affecting Environmental Exposure	
Release fraction to air from p	rocess (initial release prior to RMM):	1,5E-03
Release fraction to wastewate RMM):	er from process (initial release prior to	1,0E-06
Release fraction to soil from p	process (initial release prior to RMM):	1,0E-03
	easures at process level (source) to p	revent release
Common practices vary acros	ss sites thus conservative process re-	
lease estimates used.		
	and measures to reduce or limit disc	harges, air emis-
sions and releases to soil		
I Distriction of the control of the con-	sure is driven by freshwater.	
		į
	ved substance to or recover from onsite	
Prevent discharge of undisso wastewater.  No wastewater treatment req		

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
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	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	2,3E+06
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable	
regulations.	3
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	3

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECCTOC TDA Version 2 tool has been used to estimate werkinger aversaging	

The ECETOC TRA Version 3 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	

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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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 140/165**

Date of last issue: 12.12.2023 Version Revision Date: SDS Number:

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure occinate Worker		
30000000890	00000890	
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use in Cleaning Agents- Professional	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC19 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 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 percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration of	f Use
Covers daily exposures up to	o 8 hours (unless stated differently).
Other Operational Conditions affecting Exposure	
	an 20°C above ambient temperature (unless stated differently). dard of occupational hygiene is implemented.

Contributing Scenarios	Risk	Management Measures	
Filling/ preparation of equipme	ent	No other specific measures identified.	
from drums or contain-			
ers.Dedicated facilityPROC8b			
Filling/ preparation of equipme		No other specific measures identified.	
from drums or containers.Nor	1-		
dedicated facilityPROC8a			
Automated process with (sem	ıi)	No other specific measures identified.	
closed systems.Use in contain	ned		
systemsPROC2			
Automated process with (sem		No other specific measures identified.	
closed systems.Drum/batch tr	ans-		
fersUse in contained batch pr	0-		
cessesPROC3			
Semi Automated process. (e.g	g.:	No other specific measures identified.	
Semi automatic application of			
floor care and maintenance p	rod-		
ucts)PROC4			

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

ManualSurfacesCleaningDipping, immersion and pouringPROC13	No other specific measures identified.
Cleaning with low-pressure washersRolling, Brushingno sprayingPROC10	No other specific measures identified.
Cleaning with high pressure washersSprayingPROC11	Limit the substance content in the product to 5 %. Wear suitable gloves tested to EN374.  Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
ManualSurfacesCleaningPROC10	No other specific measures identified.
Ad hoc manual application via trigger sprays, dipping, etc.Rolling, BrushingPROC10	No other specific measures identified.
Application of cleaning products in closed systemsPROC4	No other specific measures identified.
Hand-mixing with intimate contact and only PPE availablePROC19	Wear suitable gloves tested to EN374.
Storage.PROC1	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	30
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	year):	0,015
Maximum daily site tonnage (	(kg/day):	0,041
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		10
Local marine water dilution factor: 100		
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from wide dispersive use (regional only): 0,02		•
Release fraction to wastewater from wide dispersive use: 1,0E-06		1,0E-06
Release fraction to soil from wide dispersive use (regional only): 0		•
Technical conditions and measures at process level (source) to prevent release		
Common practices vary acros	ss sites thus conservative process re-	
lease estimates used.		
Technical onsite conditions and measures to reduce or limit discharges, air emis-		
sions and releases to soil		
Risk from environmental exposure is driven by freshwater.		
No wastewater treatment required.		
	a typical removal efficiency of (%)	0
Treat onsite wastewater (prio	r to receiving water discharge) to provide	0

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
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	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	670
total wastewater treatment removal (kg/d)	
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	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 Version 3 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 adepted, then users

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.

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure ocenano - Worker	
30000000889	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents- Industrial
Use Descriptor	Sector of Use: SU3
	Process Categories: PROC1, PROC2, PROC3, PROC4,
	PROC7, PROC8a, PROC8b, PROC10, PROC13
	Environmental Release Categories: ERC4, ESVOC SpERC
	4.4a.v1
Scope of process	Covers the use as a component of cleaning products includ-
	ing transfer from storage, pouring/unloading from drums or
	containers. Exposures during mixing/diluting in the preparato-
	ry phase and cleaning activities (including spraying, brushing,
	dipping, wiping, automated and by hand), related equipment
	cleaning and maintenance.

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 - 10 kPa at S	STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the prod Unless stated otherwise.,	duct up to 100%.,
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 Ris	k Management Measures	
Bulk transfersNon-dedicated facilityPROC8a	No other specific measures identified.	
Automated process with (semi) closed systems.Use in contained systemsPROC2	No other specific measures identified.	
Automated process with (semi) closed systems.Drum/batch transfersUse in contained batch processesPROC3	No other specific measures identified.	
Application of cleaning products in closed systemsPROC2	No other specific measures identified.	
Filling/ preparation of equipment from drums or containers.PROC8b	No other specific measures identified.	
Use in contained batch process- esPROC4	No other specific measures identified.	

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

Degreasing small objects in cleaning stationPROC13	No other specific measures identifi	ed.
Cleaning with low-pressure washersPROC10	No other specific measures identifi	ed.
Cleaning with high pressure	Provide a good standard of control	led ventilation (10 to 15
washersPROC7	air changes per hour).	
	ат стату	
ManualSurfacesCleaningPROC10	No other specific measures identifi	ed.
Storage.PROC1	Store substance within a closed sy	rstem.
Section 2.2 Cont	rol of Environmental Exposure	
Substance is complex UVCB.	-	
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in regi	on:	0,1
Regional use tonnage (tonnes/year)		38
Fraction of Regional tonnage used I		1
Annual site tonnage (tonnes/year):	•	38
Maximum daily site tonnage (kg/day	<i>(</i> ):	1,900
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		20
<b>Environmental factors not influer</b>	ced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions affe	ecting Environmental Exposure	
Release fraction to air from process	(initial release prior to RMM):	0,3
Release fraction to wastewater from RMM):	n process (initial release prior to	1E-08
Release fraction to soil from proces	s (initial release prior to RMM):	0
Technical conditions and measur		event release
Common practices vary across sites	s thus conservative process re-	
lease estimates used.		
Technical onsite conditions and is sions and releases to soil		arges, air emis-
Risk from environmental exposure i	s driven by freshwater.	
Prevent discharge of undissolved su wastewater.	ubstance to or recover from onsite	
No wastewater treatment required.		
Treat air emission to provide a typic	al removal efficiency of (%)	70
Treat onsite wastewater (prior to red		0
the required removal efficiency of >:		
If discharging to domestic sewage to		0
quired onsite wastewater removal e		
Organisational measures to preven		
Do not apply industrial sludge to nat		
Sludge should be incinerated, conta	nined or reclaimed.	
Conditions and Measures related	to municipal sewage treatment p	lant
	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	

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

## ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	2,9E+06
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Massures related to external treatment of wests for	r dianagal

#### 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 Version 3 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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

30000000880	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19 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 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 percentage substance in the product up to 100%.,	
stance in Mixture/Article	Unless stated otherwise.,	
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)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	No other specific measures identified.
Preparation of material for approactionUse in contained batch processesPROC3	No other specific measures identified.
Film formation - air dryingPRC	No other specific measures identified.
Preparation of material for app cationPROC5	No other specific measures identified.

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

Material transfers Drum /betch	No other enecific measures identific	ad .	
Material transfersDrum/batch transfersNon-dedicated facili-	No other specific measures identifie	tu.	
tyPROC8a			
Material transfersDrum/batch	No other specific measures identifie	ad.	
transfersDedicated facili-	No other specific measures identifie	Gu.	
tyPROC8b			
Roller, spreader, flow applica-	No other specific measures identifie	ed.	
tionPROC10			
ManualSprayingIndoorPROC11	Provide a good standard of controlled ventilation (10 to 15 air changes per hour).  Avoid carrying out activities involving exposure for more than 4 hours  Wear suitable gloves tested to EN374.  Other skin protection measures such as impervious suits and		
	face shields may be required during which are likely to lead to substantia spraying.		
ManualSprayingOutdoorPROC11	Ensure operation is undertaken outder Avoid carrying out activities involvin		
	4 hours Wear suitable gloves tested to EN3		
	Other skin protection measures suc		
	face shields may be required during		
	which are likely to lead to substantia		
	spraying.		
Dinning immercian and neur	No other specific measures identifie	nd	
Dipping, immersion and pouringPROC13	No other specific measures identifie	Two other specific measures identified.	
Laboratory activitiesPROC15	No other specific measures identifie	No other specific measures identified.	
,	·		
Hand application - fingerpaints,	Provide a good standard of general ventilation (not less than		
pastels, adhesivesPROC19	3 to 5 air changes per hour).		
	Wear suitable gloves tested to EN374.		
Equipment cleaning and mainte-	No other specific measures identifie	-d	
nancePROC8a	The strict opening measures identified	· · · ·	
Storage.PROC1	Store substance within a closed sys	stem.	
Section 2.2 Cor	Language   Language		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Amounts Used		,	
Fraction of EU tonnage used in re-	gion:	0,1	
Regional use tonnage (tonnes/yea	r):	180	
Fraction of Regional tonnage used		5,0E-04	
Annual site tonnage (tonnes/year)		0,09	
Maximum daily site tonnage (kg/da	ay):	0,25	
Frequency and Duration of Use			
Continuous release.		365	
Emission Days (days/year):		303	

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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):	0,98
Release fraction to wastewater from wide dispersive use:	,
	0,01
Release fraction to soil from wide dispersive use (regional only):  Technical conditions and measures at process level (source) to pr	0,01
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, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
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	96,4
treatment (%)	90,4
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	230
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	
External treatment and disposal of waste should comply with applicable	local and/or region
regulations.	_
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regions
regulations.	issui una/or regioni

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

#### 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 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
O C 4 4 11 1(1	

#### 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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure Scenario - Wo	OI NCI
300000000879	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15 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 - 10 kPa at S	STP
Concentration of the Sub-	Covers percentage substance in the prod	duct up to 100%.,
stance in Mixture/Article	Unless stated otherwise.,	,
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Conditio		
	an 20°C above ambient temperature (unles	s stated differently).
	ard of occupational hygiene is implemented	
Contributing Scenarios	Risk Management Measures	
General exposures (closed systems)PROC1	No other specific measures identified.	
General exposures (closed systems)with sample collectionUse in contained systemsPROC2	No other specific measures identified.	
Film formation - force dry- ing, stoving and other tech- nologies.(closed sys- tems)Operation is carried out at elevated temperature (> 20°C above ambient temperature).PROC2	No other specific measures identified.	
Mixing operations (closed systems)Use in contained	No other specific measures identified.	

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

batch processesPROC3		
Film formation - air dry-	No other specific measures identified.	
ing(open systems)PROC4	No other specific measures identified.	
Preparation of material for	No other specific measures identified.	
applicationMixing opera-	The other openine medicales identified.	
tions (open sys-		
tems)PROC5		
Spraying (automat-	Provide a good standard of controlled ver	ntilation (10 to 15 air
ic/robotic)PROC7	changes per hour).	mation (10 to 10 an
16/1020116/1.11001	changes per near).	
ManualSprayingPROC7	Provide a good standard of controlled ver	ntilation (10 to 15 air
gg.	changes per hour).	(10 10 10 10
	3 3 7 3 3 7 7	
Material transfersNon-	No other specific measures identified.	
dedicated facilityPROC8a	'	
Material transfersDedicated	No other specific measures identified.	
facilityPROC8b	·	
Roller, spreader, flow appli-	No other specific measures identified.	
cationPROC10	•	
Dipping, immersion and	No other specific measures identified.	
pouringPROC13		
Laboratory activi-	No other specific measures identified.	
tiesPROC15		
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	No other specific measures identified.	
maintenancePROC8a	Otana autotana within a alagad auton	
Storage.PROC1	Store substance within a closed system.	
Section 2.2	Control of Engineers and all Engineers	
	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Amounts Used	in an airm.	0.4
Fraction of EU tonnage used		0,1
Regional use tonnage (tonne		420
Fraction of Regional tonnage		1
Annual site tonnage (tonnes/year):		420
Maximum daily site tonnage (		2,1E+04
Frequency and Duration of	Use	
	Continuous release.	
Emission Days (days/year): 20		20
	nfluenced by risk management	
		10
Local marine water dilution fa		100
Other Operational Conditio	ns affecting Environmental Exposure	

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Release fraction to air from process (initial release prior to RMM):	0,98
Release fraction to wastewater from process (initial release prior to	2,0E-05
RMM):	
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 disch	arges, air emis-
sions and releases to soil	T-
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 onsite	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	61,2
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Canditions and Massures related to municipal courses treatment of	lant
Conditions and Measures related to municipal sewage treatment p	96.4
Estimated substance removal from wastewater via domestic sewage treatment (%)	96,4
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4
Maximum allowable site tonnage (MSafe) based on release following	2,3E+05
total wastewater treatment removal (kg/d)	2,36+05
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	
External treatment and disposal of waste should comply with applicable	
regulations.	local and/or regional
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 Version 3 otherwise indicated	tool has been used to estimate workplace exposures unless

## **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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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

#### 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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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

30000000878	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Formulation & (re)packing of substances and mixtures- Industrial
Use Descriptor	Sector of Use: SU3, SU10 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15 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.

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 o	f Use
Covers daily exposures up t	o 8 hours (unless stated differently).
Other Operational Condition	ons affecting Exposure
Assumes use at not more th	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. temperaturesUse in contained batch processesOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC3 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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Mixing operations (open systems)PROC5	No other specific measures identified	l.
ManualTransfer from/pouring from containersNon-dedicated facilityPROC8a		
Drum/batch transfersDedicate facilityPROC8b	No other specific measures identified	l.
Production or preparation or	No other specific measures identified	
articles by tabletting, compres	3-	
sion, extrusion or pelletisa- tionPROC14		
Drum and small package fill-ingPROC9	No other specific measures identified	l.
Equipment cleaning and maintenancePROC8a	No other specific measures identified	l.
Storage.PROC1PROC2	Store substance within a closed systematical	em.
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in ragion:	0.1
		0,1 95
Regional use tonnage (tonnes		
Fraction of Regional tonnage		1
Annual site tonnage (tonnes/y		95
Maximum daily site tonnage (		9.500
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		10
	nfluenced by risk management	
Local freshwater dilution factor		10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	
	ocess (after typical onsite RMMs con-	0,98
sistent with EU Solvent Emiss		
Release fraction to wastewate RMM):	er from process (initial release prior to	5,0E-06
Release fraction to soil from p	process (initial release prior to RMM):	1,0E-04
Technical conditions and m	easures at process level (source) to pre	event release
Common practices vary acros	ss sites thus conservative process re-	
lease estimates used.	•	
Technical onsite conditions sions and releases to soil	and measures to reduce or limit discha	arges, air emis-
	sure is driven by freshwater sediment.	
	ved substance to or recover from onsite	
wastewater.	ved substance to or recover from offsite	
No wastewater treatment requ	urad	
	a typical removal efficiency of (%)	0
reat onsite wastewater (prior	r to receiving water discharge) to provide	0

0

the required removal efficiency of >= (%)

If discharging to domestic sewage treatment plant, provide the re-

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

quired onsite wastewater removal efficiency of (%)	
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 (%)	96,4
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	9,1E+05
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.	local and/or regional
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	<b>EXPOSURE ESTIMATION</b>
SECTION 3	LAI COUNT ESTIMATION

#### Section 3.1 - Health

The ECETOC TRA Version 3 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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure coeriano Troi	
30000000877	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Distribution of substance- Industrial
Use Descriptor	Sector of Use: SU3, SU8, SU9
	Process Categories: PROC1, PROC2, PROC3, PROC4,
	PROC8a, PROC8b, PROC9, PROC15
	Environmental Release Categories: ERC1, ERC2, ERC3,
	ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, 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.
	,

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 percentage substance in the product up to 100%., Unless stated otherwise.,	
Frequency and Duration of	of Use	
Covers daily exposures up	to 8 hours (unless stated differently).	
Other Operational Conditi	ons affecting Exposure	
	nan 20°C above ambient temperature (unless stated of occupational hygiene is implemented.	differently).

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Ris	sk Management Measures
General exposures (closed systems)PROC1PROC2PRO	C3	No other specific measures identified.
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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

Section 2.2 Control of Environmental Exposure	
Substance is complex UVCB.	
Predominantly hydrophobic.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	230
Fraction of Regional tonnage used locally:	2,0E-03
Annual site tonnage (tonnes/year):	0,46
Maximum daily site tonnage (kg/day):	23
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):	1,0E-02
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):	1,0E-05
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 to reduce to reduce or limit discharge to reduce to r	arges, air emis-
sions and releases to soil	
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 (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
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	96,4
treatment (%)	00.4
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	7,0E+04
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	

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

#### ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### 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 Version 3 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 140/165**

Date of last issue: 12.12.2023 Version Revision Date: SDS Number:

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure occinano - Worke	•
30000000876	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Manufacture of substance- Industrial
Use Descriptor	Sector of Use: SU3, SU8, SU9 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15 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 RISK MANA MEASURES	GEMENT
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 percentage substance in the product up to Unless stated otherwise.,	100%.,
Frequency and Duration of	of Use	
Covers daily exposures up	to 8 hours (unless stated differently).	
Other Operational Conditi	ons affecting Exposure	
	nan 20°C above ambient temperature (unless stated of occupational hygiene is implemented.	differently).

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.
General exposures (open systems)PROC4	No other specific measures identified.
Process samplingPROC8b	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Bulk transfers(open systems)PROC8b	No other specific measures identified.
Bulk transfers(closed systems)PROC8b	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

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	T
Substance is complex UVCB.	
Predominantly hydrophobic.	
Amounts Used	1
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	2,4E+03
Fraction of Regional tonnage used locally:	1
Annual site tonnage (tonnes/year):	2,4E+03
Maximum daily site tonnage (kg/day):	2,4E+04
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	100
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):	1,0E-02
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):	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	<b>5</b> ,
Risk from environmental exposure is driven by freshwater sediment.	
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 (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
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	
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	00.4
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	0.05.00
Maximum allowable site tonnage (MSafe) based on release following	2,3E+06
total wastewater treatment removal (kg/d)	10.000
Assumed domestic sewage treatment plant flow (m3/d)	10.000
Conditions and Measures related to external treatment of waste for	r disposal
During manufacturing no waste of the substance is generated.	
Conditions and measures related to external recovery of waste	
During manufacturing no waste of the substance is generated.	

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

#### ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### SECTION 3 EXPOSURE ESTIMATION

## Section 3.1 - Health

The ECETOC TRA Version 3 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 140/165**

Date of last issue: 12.12.2023 Version Revision Date: SDS Number:

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Worker** 

Exposure coeriano Tro	
30000010709	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Rubber production and processing- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC21 Environmental Release Categories: ERC1, ERC4, ERC6d, ESVOC SpERC 4.19.v1
Scope of process	Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.

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 percentage substance in the product up to 100%.,	
stance in Mixture/Article	Unless stated otherwise.,	
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 stand	dard of occupational hygiene is implemented.	

Contributing Scenarios	Ris	k Management Measures
Material transfers(closed sys-		No other specific measures identified.
tems)PROC1PROC2		
Material transfersDedicated fac	cil-	No other specific measures identified.
ityPROC8aPROC8bPROC9		
Bulk weighingUse in contained	t	No other specific measures identified.
systemsPROC1PROC2		
Small scale weighingPROC9		No other specific measures identified.
Additive premix-		No other specific measures identified.
ingPROC3PROC4PROC5		
Calendering (including Banbur	-	No other specific measures identified.
ys)Operation is carried out at		
elevated temperature (> 20°C		
above ambient tempera-		
ture).PROC6		
Pressing uncured rubber blank	(-	No other specific measures identified.
sPROC14		
Tyre build upPROC7		Provide a good standard of controlled ventilation (10 to 15 air

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

# **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	changes per hour).
VulcanisationOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC6	No other specific measures identified.
Cooling cured articlesOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC6	No other specific measures identified.
Production of articles by dipping and pouringPROC13	No other specific measures identified.
Finishing operationsPROC21	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Equipment maintenance- PROC8a	No other specific measures identified.
Storage.PROC1	Store substance within a closed system.
Storage.PROC2	Store substance within a closed system.
Section 2.2 Co	entrol of Environmental Exposure
Substance is complex UVCB.	
Predominantly hydrophobic.	

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	5,0E+00
Fraction of Regional tonnage	used locally:	1
Annual site tonnage (tonnes/		5,0E+00
Maximum daily site tonnage	(kg/day):	2,5E+02
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		20
Environmental factors not i	influenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
	ns affecting Environmental Exposure	
		0,01
RMM):		1,0E-05
Release fraction to soil from process (initial release prior to RMM):		0,0001
	neasures at process level (source) to pro-	event release
Common practices vary across sites thus conservative process re-		
lease estimates used.		
	s and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		1
Risk from environmental exposure is driven by freshwater.		
No wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%) 0		0
Treat onsite wastewater (prior to receiving water discharge) to provide		0,0

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0,0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Prevent discharge of undissolved substance to or recover from onsite v	wastewater.
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
Not applicable as there is no release to wastewater.	
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	2,9E+04
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	or 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 regulations.	e local and/or regional

SECTION 3	<b>EXPOSURE ESTIMATION</b>
SECTION 3	LAFOSONE ESTIMATION

#### Section 3.1 - Health

The ECETOC TRA Version 3 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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### 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.

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Consumer** 

30000001153	
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 Pa at STP	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100 %	
Amounts Used		
Unless stated otherwise.		
covers amount up to (g):		2.200
covers skin contact area (cm2):		468
Frequency and Duration of	f Use	
Unless stated otherwise.		
Covers use up to (days/year):		4
covers use up to (times/day of use):		1
Covers exposure up to (hours/event): 0,17		0,17
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	
Heat transfer fluids 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 ventila-	
	tion.	
	Covers use in room size of 34 m3	
	for each use event Covers exposure up to 0,17 hours/event	
Hydraulic fluids Liquids.	Covers concentrations up to 100 %	

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

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
for each use event Covers exposure up to 0,17 hours/event

Section 2.2 Control of Environmental Exposure		
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	10
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/)		5,0E-03
Maximum daily site tonnage (	kg/day):	0,014
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
Other Operational Condition	ns affecting Environmental Exposure	
Release fraction to air from w	ide dispersive use (regional only):	0,05
Release fraction to wastewate		0,025
Release fraction to soil from wide dispersive use (regional only):		0,025
	elated to municipal sewage treatment p	olant
Risk from environmental expo		
Estimated substance removal	I from wastewater via domestic sewage	96,4
treatment (%)		
Maximum allowable site tonnage (MSafe) based on release following		20
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)		2.000
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.		

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

#### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### 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.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Consumer** 

300000001151	
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	Control of Consumer Exposure	
Product Characteristics			
Physical form of product	Liquid, vapour pressure > 10 Pa 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): 37.500		37.500	
covers skin contact area (cm2):		420	
Frequency and Duration o	f Use		
Unless stated otherwise.			
Covers use up to (days/year):		365	
covers use up to (times/day of use):		1	
Exposure (hours/event): 2		2	
Other Operational Conditional	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	
	for each use event Covers exposure up to 0,05 hours/event	
Fuels Liquid Scooter Refuelling.	Covers concentrations up to 100 %	

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	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 3.750 g
	Covers outdoor use.
	Covers use in room size of 100 m3
	for each use event Covers exposure up to 0,03 hours/event
Fuels Liquid, Garden Equipment - Use.	Covers concentrations up to 100 %
	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
	for each use event Covers exposure up to 2,00 hours/event
Fuels Liquid: Garden Equipment - Refuelling.	Covers concentrations up to 100 %
	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 ventilation.
	Covers use in room size of 34 m3
	for each use event Covers exposure up to 0,03 hours/event
Fuels Liquid: Home space heater fuel.	Covers concentrations up to 100 %
	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 20 m3
	for each use event 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 20 m3
	for each use event Covers exposure up to 0,01 hours/event
	1 101 Gash add Gront Gordon Caposare up to 0,01 hours/event

Section 2.2 Control of Environmental Exposure		
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region: 0,1		
Regional use tonnage (tonnes/year): 30		30
Fraction of Regional tonnage used locally: 5,0E-04		5,0E-04

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

#### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Annual site tonnage (tonnes/year):	0,015
Maximum daily site tonnage (kg/day):	0,041
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-03
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
Risk from environmental exposure is driven by freshwater.	
Estimated substance removal from wastewater via domestic sewage treatment (%)	96,4
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	67
Assumed domestic sewage treatment plant flow (m3/d)	2.000
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 assessn	nent.
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is of	generated.

SECTION 3	EXPOSIDE 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

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### measures.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Consumer** 

expectate contains contains	
30000001150	
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 8.6e.v1
	EGVOG OPENO 0.00.V1
Scope of process	Covers the consumer use of formulated lubricants in closed
Scope of process	
	and open systems including transfer operations, application,
	operation of engines and similar articles, equipment mainte-
	nance and disposal of waste oil.

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 Pa	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 a	mount up to (g):	6.390
covers skin contact area (cm2): 468		468
Frequency and Duration of	Use	
Unless stated otherwise.		
Covers use up to (days/year): 365		365
covers use up to (times/day of use):		1
Exposure (hours/event): 6		
Other Operational Conditions affecting Exposure		
I I a I a a a a Carta a I a di a a a Para	·	· · · · · · · · · · · · · · · · · · ·

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 5 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	for each use event Covers exposure up to 4,00 hours/event
Adhesives, sealants Glues	Covers concentrations up to 30 %
DIY-use (carpet glue, tile	Covere contentions up to 50 %
glue, wood parquet glue).	
giao, moda 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
	for each use event Covers exposure up to 6,00 hours/event
Adhesives, sealants Glue	Covers concentrations up to 30 %
from spray.	Covere controlling ap to 50 %
nom opiay.	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
	for each use event Covers exposure up to 4,00 hours/event
Adhesives, sealants Seal-	Covers concentrations up to 30 %
ants.	Covere contentions 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): 35,73 cm2
	For each use event, covers amount up to 25 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 1,00 hours/event
Lubricants, greases, re-	Covers concentrations up to 100 %
lease products Liquids.	Governo controlling aprice 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 ventila-
	tion.
	Covers use in room size of 34 m3
	for each use event Covers exposure up to 0,17 hours/event
Lubricants, greases, re-	Covers concentrations up to 20 %
lease products Pastes.	·
	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
	for each use event 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

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	For each use event, covers amount up to 73 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event 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
	for each use event Covers exposure up to 1,23 hours/event
Polishes and wax blends	Covers concentrations up to 50 %
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 35 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,33 hours/event

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	2
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
Environmental factors not i	nfluenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
	ns affecting Environmental Exposure	
	ide dispersive use (regional only):	0,15
Release fraction to wastewater from wide dispersive use:		0,05
Release fraction to soil from wide dispersive use (regional only):		0,05
Conditions and Measures re	elated to municipal sewage treatment	plant
Risk from environmental expo	osure is driven by freshwater.	
Estimated substance removal from wastewater via domestic sewage treatment (%)		96,4
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)		4,3

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

#### ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Assumed domestic sewage treatment plant flow (m3/d) 2.00

#### 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.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Consumer** 

Exposure contains conta	
30000001149	
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	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa at ST	P
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 a	mount up to (g):	6.390
covers skin contact area (cm2): 468		468
Frequency and Duration of	Use	
Unless stated otherwise.		
Covers use up to (days/year): 365		365
covers use up to (times/day of use):		1
Exposure (hours/event): 6		6
Other Operational Conditions affecting Exposure		
I I alice a state di attaca di la companione	·	·

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 under typical household ventilation.
	Covers use in room size of 20 m3

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	for each use event Covers exposure up to 4,00 hours/event	
Adhesives, sealants Glues	Covers concentrations up to 30 %	
DIY-use (carpet glue, tile	Covers concentrations up to 30 %	
glue, wood parquet glue).		
9 ,	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	
	for each use event Covers exposure up to 6,00 hours/event	
Adhesives, sealants Glue	Covers concentrations up to 30 %	
from spray.		
-1 -2	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	
	for each use event Covers exposure up to 4,00 hours/event	
Adhesives, sealants Seal-	Covers concentrations up to 30 %	
ants.		
	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 25 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	for each use event Covers exposure up to 1,00 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	
	for each use event Covers exposure up to 0,17 hours/event	
Lubricants, greases, re-	Covers concentrations up to 20 %	
lease products Pastes.	'	
•	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	
	for each use event Covers exposure up to 4,00 hours/event	
Lubricants, greases, re-	Covers concentrations up to 50 %	
lease products Sprays.		
- 1	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	

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	For each use event, covers amount up to 73 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event 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
	for each use event Covers exposure up to 1,23 hours/event
Polishes and wax blends	Covers concentrations up to 50 %
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 35 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,33 hours/event

Section 2.2	Control of Environmental Exposure			
Substance is complex UVCB.				
Predominantly hydrophobic.				
Amounts Used				
Fraction of EU tonnage used	in region:	0,1		
Regional use tonnage (tonne	s/year):	2		
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		
	nfluenced by risk management	_		
Local freshwater dilution factor:		10		
Local marine water dilution factor:		100		
	Other Operational Conditions affecting Environmental Exposure			
	ide dispersive use (regional only):	0,01		
Release fraction to wastewate	er from wide dispersive use:	0,01		
Release fraction to soil from wide dispersive use (regional only):		0,01		
Conditions and Measures related to municipal sewage treatment plant				
Risk from environmental exposure is driven by freshwater.				
Estimated substance removal from wastewater via domestic sewage		96,4		
treatment (%)				
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)		4,4		

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

#### ShellSol 140/165

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Assumed domestic sewage treatment plant flow (m3/d) 2.0

#### 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.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

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

## **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Consumer** 

30000001147		
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 A MEASURES	ND RISK MANAGEMENT
Section 2.1	Control of Consumer Exposure	
<b>Product Characteristics</b>		
Physical form of product	Liquid, vapour pressure > 10 Pa a	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 a	mount up to (g):	13.800
covers skin contact area (cm2):		857,5
<b>Frequency and Duration o</b>	f Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day	of use):	4
Covers exposure up to (hou	rs/event):	8
Other Operational Condition	ons affecting Exposure	
Unless stated otherwise.		
Covers use at ambient temp		
Covers use in room size of 2	20m3	

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Air care products Air care, instant action (aerosol sprays).	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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	Covers use in room size of 20 m3	
	for each use event 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).		
	covers use up to 365 day/year	
	Covers use up to 4 times/day of use	
	For each use event, covers amount up to 5 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	for each use event Covers exposure up to 0,25 hours/event	
Air care products Air care, continuous action (solid and liquid).	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): 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	
	for each use event 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).		
,	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	
	for each use event Covers exposure up to 8,00 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	
	for each use event 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	

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	tion
	tion.
	Covers use in room size of 34 m3
	for each use event 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
	for each use event Covers exposure up to 0,25 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry	Covers concentrations up to 5 %
and dish washing products.	
<u> </u>	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
Biocidal products (e.g. Dis-	for each use event Covers exposure up to 0,50 hours/event Covers concentrations up to 5 %
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 20 m3
	for each use event 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 %
g.2.00 0.00.11010 <sub>[1</sub>	covers use up to 128 day/year
	Covers use up to 125 day/year
	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 20 m3
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According to EC No 1907/2006 as amended as at the date of this SDS

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	for each use event 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.	
	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
	for each use event Covers exposure up to 2,2 hours/event
Coatings and paints, thin-	Covers concentrations up to 27,5 %
ners, paint removers Sol-	covere control matterns up to 21,50 %
vent rich, high solid, water	
borne paint.	
	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
	for each use event Covers exposure up to 2,2 hours/event
Coatings and paints, thin-	Covers concentrations up to 50 %
ners, paint removers Aero-	эт э
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 under typical household ventilation.
	Covers use in room size of 34 m3
	for each use event Covers exposure up to 0,33 hours/event
Coatings and paints, thin-	Covers concentrations up to 50 %
ners, paint removers Re-	'
movers (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
	for each use event Covers exposure up to 2,00 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.

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	for each use event Covers exposure up to 0,17 hours/event
Lubricants, greases, re-	Covers concentrations up to 20 %
lease products Pastes.	Covers concentrations up to 20 //
iodoo pioddoo i dotoo.	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
	for each use event Covers exposure up to 4,00 hours/event
Lubricants, greases, re-	Covers concentrations up to 50 %
lease products Sprays.	'
	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
	for each use event Covers exposure up to 0,17 hours/event
Washing and cleaning	Covers concentrations up to 5 %
products (including solvent	
based products) Laundry	
and dish washing products.	
	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
	for each use event 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	Covers concentrations up to 5 %
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 20 m3
	for each use event 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 %
g	covers use up to 128 day/year
	Covers use up to 125 day/year  Covers use up to 1 times/day of use
	1 Octors as ap to 1 tillios/day of ase

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

### **ShellSol 140/165**

regulations.

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	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 20 m3	
	for each use event Covers exposure up to 0,17 hours/event	
Welding and soldering products (with flux coatings or flux cores.), flux products	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 20 m3	
	for each use event Covers exposure up to 1,00 hours/event	

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	I in region:	0,1
Regional use tonnage (tonne	es/year):	10
Fraction of Regional tonnage		5,0E-04
Annual site tonnage (tonnes	/year):	5,0E-03
Maximum daily site tonnage	(kg/day):	0,014
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
<b>Environmental factors not</b>	influenced by risk management	
Local freshwater dilution fact	or:	10
Local marine water dilution fa	actor:	100
Other Operational Condition	ons affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):		0,95
Release fraction to wastewa	ter from wide dispersive use:	0,025
Release fraction to soil from wide dispersive use (regional only):		0,025
Conditions and Measures	related to municipal sewage treatment p	olant
	osure is driven by freshwater.	
Estimated substance remove treatment (%)	al from wastewater via domestic sewage	96,4
Maximum allowable site tonr total wastewater treatment re	nage (MSafe) based on release following emoval (kg/d)	20
Assumed domestic sewage		2.000
Conditions and Measures related to external treatment of waste for disposal		
External treatment and disposal regulations.	osal of waste should comply with applicable	e local and/or region-
	related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional		

SECTION 3	EXPOSURE ESTIMATION

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

#### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### 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

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

**Exposure Scenario - Consumer** 

30000001146		
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, ERC8d, 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 AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	e
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa	
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):		857,5
Frequency and Duration o	f 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 Conditi	ons affecting Exposure	·
Unless stated otherwise.	<u> </u>	

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 under typical household ventilation.	

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	Covers use in room size of 20 m3	
	for each use event Covers exposure up to 4 hours/event	
Adhesives, sealants Glues	Covers concentrations up to 30 %	
DIY-use (carpet glue, tile	Covers concentrations up to 30 %	
glue, wood parquet glue).		
gide, wood parquet gide).	covers use up to 1 day/year	
	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	
	for each use event Covers exposure up to 6,00 hours/event	
Adhesives, sealants Glue	Covers concentrations up to 30 %	
from spray.		
	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	
	for each use event Covers exposure up to 4,00 hours/event	
Adhesives, sealants Seal-	Covers concentrations up to 30 %	
ants.	· ·	
	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	
	for each use event Covers exposure up to 1,00 hours/event	
Anti-Freeze and de-icing	Covers concentrations up to 1 %	
products Washing car win-		
dow.		
	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	
	for each use event Covers exposure up to 0,02 hours/event	
Anti-Freeze and de-icing	Covers concentrations up to 10 %	
products Pouring into radia-	Ouvers concentrations up to 10 /0	
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-	
	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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

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 ventila-
	tion.
	Covers use in room size of 34 m3
	for each use event 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 %
	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
	for each use event 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 20 m3
	for each use event 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 20 m3
	for each use event Covers exposure up to 0,17 hours/event
Coatings and paints, thin-	Covers concentrations up to 1,5 %
ners, paint removers Wa-	Covere control and to 1,0 /0

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

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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
for each use event Covers exposure up to 2,20 hours/event
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 for each use event 2,20 hours/event
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 34 m3
for each use event Covers exposure up to 0,33 hours/event
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
for each use event Covers exposure up to 2,00 hours/event
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
for each use event Covers exposure up to 4,00 hours/event
Covers concentrations up to 2 %

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

	agyers use up to 12 day/year
	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
	for each use event 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 50 %
	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 %
	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
	for each use event Covers exposure up to 2,20 hours/event
Non-metal-surface treat- 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
	for each use event Covers exposure up to 2,20 hours/event
Non-metal-surface treat- ment products 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 34 m3
	for each use event Covers exposure up to 0,33 hours/event
Non-metal-surface treat-	Covers concentrations up to 50 %
ment products Removers	COVERS CONCENTIALIONS UP to 50 /0

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

(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
	for each use event 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 20 m3
	for each use event Covers exposure up to 2,20 hours/event
Leather tanning, dye, finishing, impregnation and care products 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 56 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 1,23 hours/event
Leather tanning, dye, finishing, impregnation and care products 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 56 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,33 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, re-	Covers concentrations up to 20 %

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

### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

lease products Pastes.	
lease products rastes.	acyora una un 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
	for each use event 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
	for each use event Covers exposure up to 0,17 hours/event
Polishes and wax blends	Covers concentrations up to 50 %
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
	for each use event 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
	for each use event Covers exposure up to 0,33 hours/event
Textile dyes, finishing and impregnating products; including bleaches and other processing aids	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): 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 20 m3
	Covers use in room size or zo ms

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

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

#### **ShellSol 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	50
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	0,025
Maximum daily site tonnage (kg/day):	0,068
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):	0,99
Release fraction to wastewater from wide dispersive use:	0,01
Release fraction to soil from wide dispersive use (regional only):	5,0E-03
Conditions and Measures related to municipal sewage treatment p	lant
Risk from environmental exposure is driven by freshwater.	
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	
Maximum allowable site tonnage (MSafe) based on release following	92
total wastewater treatment removal (kg/d)	
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	local and/or region-

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		
TI FORTOG TDA ( II I	14 4 4	

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 140/165**

Version Revision Date: SDS Number: Date of last issue: 12.12.2023

3.5 19.02.2024 800001006178 Print Date 26.02.2024

#### 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.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).