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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

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

#### 1.1 Product identifier

Trade name : ShellSol D 100S

Product code : Q7729

Registration number EU : 01-2119485032-45-0000

Synonyms : Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2%

aromatics

CAS-No. : 64742-47-8

EC-No. : 917-488-4

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

Sheet

: sccmsds@shell.com

#### 1.4 Emergency telephone number

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

week)

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)

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

ways.

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

Supplemental Hazard Statements EUH066: Repeated exposure may cause skin dry-

ness or cracking.

#### 2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements : PHYSICAL HAZARDS:

Not classified as a physical hazard according to CLP

criteria.

**HEALTH HAZARDS:** 

H304 May be fatal if swallowed and enters airways.

**ENVIRONMENTAL HAZARDS:** 

Not classified as environmental hazard according to

CLP criteria.

Supplemental Hazard

Statements

EUH066

Repeated exposure may cause skin dryness or

cracking.

Precautionary statements : Prevention:

P243 Take action to prevent static discharges.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

2.3 Other hazards

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

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

May form flammable/explosive vapour-air mixture.

This material is a static accumulator.

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

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.

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

#### 3.1 Substances

#### Components

| Chemical name   | CAS-No.<br>EC-No.         | Concentration (% w/w) |
|---|---------------------------|-----------------------|
| Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics - | Not Assigned<br>917-488-4 | 100                   |

#### **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 : No treatment necessary under normal conditions of use. If

symptoms persist, obtain medical advice.

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,

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

chest congestion or continued coughing or wheezing.

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

Symptoms : Not considered to be an inhalation hazard under normal con-

ditions of use.

Possible respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, cough-

ing, and/or difficulty breathing.

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 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.

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

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.

#### **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.

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

### 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.

#### 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

naterial.

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 al-

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

#### ShellSol D 100S

Date of last issue: 07.03.2023 Version Revision Date: SDS Number: 2.3 23.11.2023 800001014046 Print Date 30.11.2023

> lowed 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 (≤ 1 m/s until fill pipe submerged to twice its diameter, then ≤ 7 m/s). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

Refer to guidance under Handling section.

Wash hands before eating, drinking, smoking and using the Hygiene measures toilet. Launder contaminated clothing before re-use. Do not

ingest. If swallowed, then seek immediate medical assistance.

#### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Further information on storage stability

Storage Temperature:

Ambient.

Bulk storage tanks should be diked (bunded).

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

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

harmful or toxic to man or to the environment.

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

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

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.

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

### 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**

| Components                              | CAS-No.           | Value type (Form of exposure) | Control parameters | Basis   |
|---|-------------------|-------------------------------|--------------------|---------|
| Aliphatic dearom.<br>solvents 200 - 250 | Not As-<br>signed | TWA                           | 1.050 mg/m3        | EU HSPA |

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

No biological limit allocated.

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

| Remarks:      | No DNEL value has been established.    |
|---------------|--|
| I IVEIIIAINS. | I NO DIVEL VAIUE HAS DEEH ESTADIISHEU. |

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

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

#### 8.2 Exposure controls

#### **Engineering measures**

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

Use sealed systems as far as possible.

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

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

#### 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.

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

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

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

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

### Personal protective equipment

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

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

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

protective eyewear is recommended. Approved to EU Standard EN166.

Hand protection

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

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

rubber Nitrile rubber gloves.

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

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

izer is recommended.

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

use.

For prolonged or repeated exposures use impervious clothing

over parts of the body subject to exposure.

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

ard, and provide employee skin care programmes.

Protective clothing approved to EU Standard EN14605.

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

assessment deems it so.

Respiratory protection : If engineering controls do not maintain airborne concentra-

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

ratus.

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

priate combination of mask and filter.

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

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

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

### 9.1 Information on basic physical and chemical properties

Physical state : Liquid.

Colour : colourless

Odour : Paraffinic, sweet

Odour Threshold : Data not available

Melting point/freezing point : Data not available

Boiling point/boiling range : Typical 234 - 260 °CMethod: ASTM D86

Flammability

Flammability (solid, gas) : Not applicable

Lower explosion limit and upper explosion limit / flammability limit

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

# ShellSol D 100S

SDS Number: Date of last issue: 07.03.2023 Version Revision Date: 2.3 23.11.2023 800001014046 Print Date 30.11.2023

Upper explosion limit /

upper flammability limit

upper flammability limit

5,5 %(V)

Lower explosion limit /

: Lower flammability limit

Lower flammability limit

0,5 %(V)

Typical 103 °C Flash point

Method: ASTM D-93 / PMCC

232 °C Auto-ignition temperature

Method: ASTM E-659

215 °C

Method: DIN 51794

Decomposition temperature

Decomposition tempera-

ture

Data not available

рΗ Not applicable

Viscosity

Data not available Viscosity, dynamic

Viscosity, kinematic Typical 2,9 mm2/s (25 °C)

Method: ASTM D445

Solubility(ies)

Water solubility < 0,05 g/l immiscible

Partition coefficient: n-

octanol/water

log Pow: 7 - 8,7

: < 0,01 kPa (20 °C) Vapour pressure

< 1 Pa (0 °C)

Relative density Data not available

Density Typical 797 kg/m3 (15 °C)

Method: ASTM D4052

Bulk density Data not available

Relative vapour density Data not available

Particle characteristics

Particle size Data not available

9.2 Other information

**Explosives** Not applicable

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

Oxidizing properties : Data not available

Evaporation rate : > 3,900

Method: DIN 53170, di-ethyl ether=1

< 0.01

Method: ASTM D 3539, nBuAc=1

Conductivity: < 100 pS/m, The conductivity of this material

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

uid

Surface tension : Typical 28 mN/m, 20 °C

Molecular weight : Data not available

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

#### 10.1 Reactivity

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

#### 10.2 Chemical stability

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

#### 10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

#### 10.4 Conditions to avoid

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

In certain circumstances product can ignite due to static elec-

tricity.

### 10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

#### 10.6 Hazardous decomposition products

Hazardous decomposition products are not expected to form during normal storage.

Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified or-

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

ganic 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.

### **Acute toxicity**

# **Components:**

Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

Acute oral toxicity : LD50 (Rat): > 5000 mg/kg

Remarks: Low toxicity

Acute inhalation toxicity : (Rat): Exposure time: 4 hrs

Remarks: Low toxicity by inhalation.

LC50 greater than near-saturated vapour concentration.

Acute dermal toxicity : LD50 (Rabbit): > 2000 mg/kg

Remarks: Low toxicity

### Skin corrosion/irritation

#### **Components:**

Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

Remarks : Causes mild skin irritation.

Prolonged/repeated contact may cause defatting of the skin

which can lead to dermatitis.

#### Serious eye damage/eye irritation

#### **Components:**

Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

Remarks : Not irritating to eye.

# Respiratory or skin sensitisation

# **Components:**

Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

Remarks : Not a sensitiser.

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 D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

### Germ cell mutagenicity

#### **Components:**

Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

Genotoxicity in vivo : Remarks: Not mutagenic.

Germ cell mutagenicity- As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

#### Carcinogenicity

#### **Components:**

Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

Remarks : Repeated exposure causes skin tumour promotion in experi-

mental animals. Not a carcinogen.

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

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

| Material   | GHS/CLP Carcinogenicity Classification |
|--|--|
| Hydrocarbons, C13-C15, n-<br>alkanes, isoalkanes, cyclics,<br>< 2% Aromatics - | No carcinogenicity classification.     |

#### Reproductive toxicity

#### Components:

Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

Effects on fertility

Remarks: Not a developmental toxicant., Based on available data, the classification criteria are not met., Does not impair

fertility.

Reproductive toxicity - As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

#### STOT - single exposure

#### **Components:**

Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

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 D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

#### STOT - repeated exposure

#### **Components:**

# Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

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

sidered relevant to humans

### **Aspiration toxicity**

#### **Components:**

#### Hydrocarbons, C13-C15, 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 : Unless indicated otherwise, the data presented is representa-

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

ponent(s).

#### **Components:**

#### Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

# **SECTION 12: Ecological information**

### 12.1 Toxicity

#### **Components:**

#### Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

Toxicity to fish : Remarks: LC/EC/IC50 > 100 mg/l

Practically non toxic:

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 D 100S

Date of last issue: 07.03.2023 Version Revision Date: SDS Number:

2.3 23.11.2023 800001014046 Print Date 30.11.2023

aquatic invertebrates

Toxicity to daphnia and other : Remarks: LC/EC/IC50 > 100 mg/l

Practically non toxic:

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

Remarks: LC/EC/IC50 > 100 mg/l Toxicity to algae/aquatic plants

Practically non toxic:

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

Toxicity to microorganisms

Remarks: LC/EC/IC50 > 100 mg/l

Practically non toxic:

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

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

Remarks: Data not available

#### 12.2 Persistence and degradability

#### **Components:**

Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

Remarks: Readily biodegradable. Biodegradability

Oxidises rapidly by photo-chemical reactions in air.

#### 12.3 Bioaccumulative potential

#### Components:

Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

Bioaccumulation : Remarks: Has the potential to bioaccumulate.

#### 12.4 Mobility in soil

#### **Components:**

Hydrocarbons, C13-C15, 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

#### **Components:**

Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

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

tence, bioaccumulation and toxicity and hence is not consid-

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

ered to be PBT or vPvB..

#### 12.6 Endocrine disrupting properties

#### **Product:**

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

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

#### 12.7 Other adverse effects

#### **Product:**

Additional ecological infor-

mation

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

#### **Components:**

#### Hydrocarbons, C13-C15, n-alkanes, isoalkanes, cyclics, < 2% Aromatics -:

Additional ecological infor-

mation

: In view of the high rate of loss from solution, the product is unlikely

to pose a significant hazard to aquatic life.

### **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,

national, and local laws and regulations.

Local regulations may be more stringent than regional or na-

tional requirements and must be complied with.

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

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 : Not regulated as a dangerous good IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

#### 14.2 UN proper shipping name

ADR : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

# 14.3 Transport hazard class(es)

ADR : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

#### 14.4 Packing group

ADR : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

IATA : Not regulated as a dangerous good

#### 14.5 Environmental hazards

ADR : Not regulated as a dangerous good

IMDG : Not regulated as a dangerous good

#### 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.

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

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

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

space entry.

# **SECTION 15: Regulatory information**

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

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

(Annex XIV) tion under REACH.

REACH - Candidate List of Substances of Very High : This product does not contain sub-Concern for Authorisation (Article 59). : stances of very high concern (Regu

stances of very high concern (Regulation (EC) No 1907/2006 (REACH),

Article 57).

Volatile organic compounds : Volatile organic compounds (VOC) content: 0 %

# Other regulations:

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

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

AIIC : Listed

DSL : Listed

IECSC : Listed

KECI : Listed

PICCS : Listed

TSCA : Listed

TCSI : Listed

NZIoC : Listed

#### 15.2 Chemical safety assessment

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

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

#### ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

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

#### Full text of other abbreviations

EU HSPA : OEL based on European Hydrocarbon Solvents Producers

(CEFIC-HSPA) methodology.

EU HSPA / TWA : Time-Weighted Average Concentration (TWA) (8 hrs.)

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

#### **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

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

from the previous version.

Sources of key data used to

compile the Safety Data

Sheet

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

IUCLID date base, EC 1272 regulation, etc).

Identified Uses according to the Use Descriptor System

**Uses - Worker** 

Title : Manufacture of substance- Industrial

**Uses - Worker** 

Title : Distribution of substance- Industrial

**Uses - Worker** 

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

trial

**Uses - Worker** 

Title : Uses in Coatings- Industrial

**Uses - Worker** 

Title : Uses in Coatings- Professional

**Uses - Worker** 

Title : Use in Cleaning Agents- Industrial

**Uses - Worker** 

Title : Use in Cleaning Agents- Professional

**Uses - Worker** 

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

Industrial

**Uses - Worker** 

Title : Lubricants- Industrial

**Uses - Worker** 

Title : Lubricants- ProfessionalHigh Environmental Release

**Uses - Worker** 

Title : Metal working fluids / rolling oils- IndustrialLow Environmental

Release

**Uses - Worker** 

Title : Metal working fluids / rolling oils- ProfessionalHigh Environ-

mental Release

Uses - Worker

Title : Use as binders and release agents- Industrial

**Uses - Worker** 

Title : Use as binders and release agents- Professional

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

# ShellSol D 100S

SDS Number: Date of last issue: 07.03.2023 Version **Revision Date:** 

2.3 23.11.2023 800001014046 Print Date 30.11.2023

**Uses - Worker** 

Title Use as a fuel- Industrial

**Uses - Worker** 

Title Use as a fuel- Professional

**Uses - Worker** 

Title Functional Fluids- Industrial

**Uses - Worker** 

Functional Fluids- Professional Title

**Uses - Worker** 

Title Road and construction applications- Professional

**Uses - Worker** 

Title Use in laboratories- Industrial

**Uses - Worker** 

Title Use in laboratories- Professional

**Uses - Worker** 

Title Water treatment chemicals- Industrial

**Uses - Worker** 

Title Water treatment chemicals- Professional

**Uses - Worker** 

Mining chemicals- Industrial Identified Uses according to the Use Descriptor System

**Uses - Consumer** 

Title Uses in Coatings

- Consumer

**Uses - Consumer** 

Title Use in Cleaning Agents

- Consumer

**Uses - Consumer** 

Title Lubricants - Consumer

Low Environmental Release

**Uses - Consumer** 

Title Lubricants

- Consumer

High Environmental Release

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

**Uses - Consumer** 

Title : Use as a fuel

- Consumer

**Uses - Consumer** 

Title : Functional Fluids

- Consumer

**Uses - Consumer** 

Title : Other Consumer Uses

- Consumer

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

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

**Exposure Scenario - Worker** 

| 30000010500      |   |
|------------------|---|
| 300000010300     |   |
| 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 MANAGEMENT MEASURES   |  |
|---------------------------------|---|--|
| Section 2.1                     | Control of Worker Exposure  |  |
| Product Characteristics         |   |  |
| Physical form of product        | Liquid, vapour pressure < 0.5 kPa at STP  |  |
| Concentration of the Sub-       | Covers 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     | ns affecting Exposure   |  |
| Operation is carried out at ele | evated temperature (> 20°C above ambient temperature).  |  |
| Assumes a good basic standa     | ard of occupational hygiene is implemented.   |  |
| Contributing Scenarios          | Risk Management Measures  |  |
| General measures (Aspiration)   | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |
| Section 2.2                     | Control of Environmental Exposure   |  |
| Not applicable.                 |   |  |

| SECTION 3            | EXPOSURE ESTIMATION |
|----------------------|---------------------|
| Section 3.1 - Health |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

Not applicable.

Risk Management Measures are based on qualitative risk characterisation.

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

### **Exposure Scenario - Worker**

| 30000010501      |  |
|------------------|--|
| SECTION 1        | EXPOSURE SCENARIO TITLE  |
| Title            | Distribution of substance- Industrial  |
| Use Descriptor   | Sector of Use: SU3 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 distribution and associated laboratory activities. |

| SECTION 2   | OPERATIONAL CONDITIONS AND RISI<br>MEASURES   | K MANAGEMENT     |
|---|---|------------------|
| Section 2.1   | Control of Worker Exposure  |                  |
| Product Characteristics   |   |                  |
| Physical form of product  | Liquid, vapour pressure < 0.5 kPa at STP  |                  |
| Concentration of the Sub-   | Covers percentage substance in the produ  | uct 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   | ns affecting Exposure   |                  |
|   | evated temperature (> 20°C above ambient  |                  |
| Assumes a good basic standard of occupational hygiene is implemented. |   |                  |
| Contributing Scenarios  | Risk Management Measures  |                  |
| General measures (Aspiration)   | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |                  |
| Section 2.2   | Control of Environmental Exposure   |                  |
| Not applicable.   |   |                  |

| SECTION 3            | EXPOSURE ESTIMATION |
|----------------------|---------------------|
| Section 3.1 - Health |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

Not applicable.

Risk Management Measures are based on qualitative risk characterisation.

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

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

| 30000010502      | ·  |
|------------------|--|
| SECTION 1        | EXPOSURE SCENARIO TITLE  |
| Title            | Formulation & (re)packing of substances and mixtures- Industrial   |
| Use Descriptor   | Sector of Use: 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 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 t                       | o 8 hours (unless stated differently).  |
| Other Operational Condition                       | ons affecting Exposure  |
| •   | lovated temporature (> 20°C above ambient temporature)                            |

Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.

| Contributing Scenarios        | Risk Management Measures  |
|-------------------------------|---|
| General measures (Aspiration) | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |
| Section 2.2                   | Control of Environmental Exposure   |
| Not applicable.               |   |

|  | SECTION 3 | EXPOSURE ESTIMATION |
|--|-----------|---------------------|
|--|-----------|---------------------|

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

# Section 3.1 - Health

Not applicable.

Risk Management Measures are based on qualitative risk characterisation.

# Section 3.2 - Environment

Not applicable.

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

**Exposure Scenario - Worker** 

| 300000010503     |  |
|------------------|--|
| 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 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 Conditio      |   |  |
| Operation is carried out at ele | evated temperature (> 20°C above ambient temperature).  |  |
| Assumes a good basic stand      | ard of occupational hygiene is implemented.             |  |
| Contributing Scenarios          | Risk Management Measures                                |  |
| General measures (Aspiration)   |   |  |
| Section 2.2                     | Control of Environmental Exposure                       |  |
| Not applicable.                 |   |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| SECTION 3  | EXPOSURE ESTIMATION |
|--|---------------------|
| Section 3.1 - Health   |                     |
| Not applicable.  |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

**Exposure Scenario - Worker** 

| 30000010504      |  |
|------------------|--|
| 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, ERC8b, 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 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   |
|  | 8 hours (unless stated differently).                    |
| Other Operational Condition  |   |
|  | evated temperature (> 20°C above ambient temperature).  |
| Assumes a good basic standa  | ard of occupational hygiene is implemented.             |
| Contributing Scenarios   | Risk Management Measures                                |
| General measures (Aspiration)  The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |   |
| Section 2.2  | Control of Environmental Exposure                       |
| Not applicable.  |   |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| SECTION 3  | EXPOSURE ESTIMATION |
|--|---------------------|
| Section 3.1 - Health   |                     |
| Not applicable.  |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

### **Exposure Scenario - Worker**

| 30000010506      |   |
|------------------|---|
| 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 including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance. |

| SECTION 2   | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES                               |
|---|---|
| Section 2.1                                       | Control of Worker Exposure  |
| Product Characteristics                           |   |
| Physical form of product                          | Liquid, vapour pressure < 0.5 kPa at STP  |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., |
| Frequency and Duration o                          | f Use   |
| Covers daily exposures up t                       | o 8 hours (unless stated differently).  |
| Other Operational Condition                       | ons affecting Exposure  |
| Operation is carried out at e                     | levated temperature (> 20°C above ambient temperature).                           |

Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented.

| Contributing Scenarios        | Risk Management Measures  |
|-------------------------------|---|
| General measures (Aspiration) | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |
| Section 2.2                   | Control of Environmental Exposure   |
| Not applicable.               |   |

| SECTION 3 | EXPOSURE ESTIMATION |
|-----------|---------------------|
|           |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

# Section 3.1 - Health

Not applicable.

Risk Management Measures are based on qualitative risk characterisation.

# Section 3.2 - Environment

Not applicable.

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

### **Exposure Scenario - Worker**

| 30000010507      |   |
|------------------|---|
| 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 Environmental Release Categories: ERC8a, ERC8b, 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  |  |
| <b>Product Characteristics</b>   | Product Characteristics   |  |
| Physical form of product   | Liquid, vapour pressure < 0.5 kPa at STP  |  |
| Concentration of the Substance in Mixture/Article  | Covers percentage substance in the product up to 100%.,   |  |
| Frequency and Duration of  | Frequency and Duration of Use   |  |
| Covers daily exposures up to   | 8 hours (unless stated differently).  |  |
| Other Operational Condition  | ns affecting Exposure   |  |
| Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented. |   |  |
| Contributing Scenarios   | Risk Management Measures  |  |
| General measures (Aspiration)  | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |
| Section 2.2  | Control of Environmental Exposure   |  |
| Not applicable.  |   |  |

| SECTION 3            | EXPOSURE ESTIMATION |
|----------------------|---------------------|
| Section 3.1 - Health |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

Not applicable.

Risk Management Measures are based on qualitative risk characterisation.

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Exposure Scenario - wo | i nei   |
|------------------------|---|
| 30000010509            |   |
| SECTION 1              | EXPOSURE SCENARIO TITLE   |
| Title                  | Use in Oil and Gas field drilling and production operations-<br>Industrial  |
| Use Descriptor         | Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b Environmental Release Categories: ERC4, ESVOC SpERC 4.5a.v1  |
| Scope of process       | Oil field well drilling and production operations (including drilling muds and well cleaning) including material transfers, onsite formulation, well head operations, shaker room activities and related maintenance. |

| SECTION 2                       | OPERATIONAL CONDITIONS AND RISK MANAGEMENT                        |  |
|---------------------------------|---|--|
|                                 | MEASURES  |  |
| Section 2.1                     | Control of Worker Exposure  |  |
| Product Characteristics         |   |  |
| Physical form of product        | Liquid, vapour pressure < 0.5 kPa at STP                          |  |
| Concentration of the Sub-       | Covers 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 Conditio      | ns affecting Exposure   |  |
| Operation is carried out at ele | evated temperature (> 20°C above ambient temperature).            |  |
| Assumes a good basic stand      | ard of occupational hygiene is implemented.                       |  |
| -                               |   |  |
| Contributing Scenarios          | Risk Management Measures  |  |
| General measures (Aspira-       | The H304 hazard statement (May be fatal if swallowed and          |  |
| tion)                           | enters airways) relates to potential for aspiration, a non-       |  |
|                                 | quantifiable hazard determined by physico-chemical proper-        |  |
|                                 | ties (i.e. viscosity) that can occur during ingestion and also if |  |
|                                 | it is vomited following ingestion. A DNEL cannot be derived.      |  |
|                                 | Risks from the physicochemical hazards of substances can          |  |
|                                 | be controlled by implementing risk management measures.           |  |
|                                 | For substances classified as H304, the following measures         |  |
|                                 | need to be implemented to control the aspiration hazard.          |  |
|                                 | Do not ingest. If swallowed, then seek immediate medical          |  |
|                                 | assistance  |  |
|                                 |   |  |
| Section 2.2                     | Control of Environmental Exposure                                 |  |
| Not applicable.                 |   |  |
|                                 | · · · · · · · · · · · · · · · · · · ·                             |  |

| SECTION 3            | EXPOSURE ESTIMATION |
|----------------------|---------------------|
| Section 3.1 - Health |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

Not applicable.

Risk Management Measures are based on qualitative risk characterisation.

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| 30000010510      |  |
|------------------|--|
| 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 kPa at STP  |                   |
| Concentration of the Sub-     | Covers percentage substance in the prod   | luct 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   | ns affecting Exposure   |                   |
|                               | vated temperature (> 20°C above ambient   |                   |
| Assumes a good basic standa   | ard of occupational hygiene is implemented  | d.                |
| Contributing Scenarios        | Risk Management Measures  |                   |
| General measures (Aspiration) | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |                   |
| Section 2.2                   | Control of Environmental Exposure   |                   |
| Not applicable.               |   |                   |

| SECTION 3            | EXPOSURE ESTIMATION |
|----------------------|---------------------|
| Section 3.1 - Health |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

Not applicable.

Risk Management Measures are based on qualitative risk characterisation.

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| 300000010511     |   |
|------------------|---|
| 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, ERC8b, 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 RISI<br>MEASURES                           | K MANAGEMENT     |  |
|--------------------------------|---|------------------|--|
| Section 2.1                    | Control of Worker Exposure  |                  |  |
| <b>Product Characteristics</b> |   |                  |  |
| Physical form of product       | Liquid, vapour pressure < 0.5 kPa at STP                              |                  |  |
| Concentration of the Sub-      | Covers percentage substance in the produ                              | uct 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    | ns affecting Exposure   |                  |  |
|                                | evated temperature (> 20°C above ambient                              |                  |  |
| Assumes a good basic standa    | Assumes a good basic standard of occupational hygiene is implemented. |                  |  |
| Contributing Scenarios         | Risk Management Measures  |                  |  |
| General measures (Aspiration)  |   |                  |  |
| Section 2.2                    | Control of Environmental Exposure                                     |                  |  |
| Not applicable.                |   |                  |  |

| SECTION 3            | EXPOSURE ESTIMATION |
|----------------------|---------------------|
| Section 3.1 - Health |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

Not applicable.

Risk Management Measures are based on qualitative risk characterisation.

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Exposure Scenario - World | Ker   |
|---------------------------|---|
| 300000010514              |   |
| SECTION 1                 | EXPOSURE SCENARIO TITLE   |
| Title                     | Metal working fluids / rolling oils- IndustrialLow Environmental Release  |
| 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 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  |   |  |
|  | 8 hours (unless stated differently).  |  |
| Other Operational Conditio   |   |  |
| Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented. |   |  |
| Contributing Scenarios   | Risk Management Measures  |  |
| General measures (Aspiration)  | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |
| Section 2.2  | Control of Environmental Exposure   |  |
| Not applicable.  |   |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| SECTION 3  | EXPOSURE ESTIMATION |
|--|---------------------|
| Section 3.1 - Health   |                     |
| Not applicable.  |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |
|  |                     |

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Exposure Scenario - Worker |   |
|----------------------------|---|
| 300000010515               |   |
| SECTION 1                  | EXPOSURE SCENARIO TITLE   |
| Title                      | Metal working fluids / rolling oils- ProfessionalHigh Environ-<br>mental Release  |
| 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 RIS  | K MANAGEMENT      |
|---------------------------------|---|-------------------|
| Section 2.1                     | Control of Worker Exposure  |                   |
| Product Characteristics         |   |                   |
| Physical form of product        | Liquid, vapour pressure < 0.5 kPa at STF  |                   |
| Concentration of the Sub-       | Covers percentage substance in the prod   | duct 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     | ns affecting Exposure   |                   |
| Operation is carried out at ele | evated temperature (> 20°C above ambien   | t temperature).   |
| Assumes a good basic stand      | ard of occupational hygiene is implemente   | d.                |
| Contributing Scenarios          | Risk Management Measures  |                   |
| General measures (Aspiration)   | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |                   |
| Section 2.2                     | Control of Environmental Exposure   |                   |
| Not applicable.                 |   |                   |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| SECTION 3  | EXPOSURE ESTIMATION |
|--|---------------------|
| Section 3.1 - Health   |                     |
| Not applicable.  |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

## ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Exposure occinato - Worker |   |
|----------------------------|---|
| 300000010516               |   |
|                            |   |
| 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, PROC7, PROC8b, PROC10, PROC13, PROC14                  |
|                            | Environmental Release Categories: ERC4, ESVOC SpERC           |
|                            | 4.10a.v1  |
|                            |   |
| 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.  |
|                            | g, and naturally  |
|                            | I   |

| SECTION 2   | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |  |
|---|---|--|
| Section 2.1                                       | Control of Worker Exposure  |  |
| Product Characteristics                           |   |  |
| Physical form of product                          | Liquid, vapour pressure < 0.5 kPa at STP  |  |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise.,   |  |
| Frequency and Duration of                         |   |  |
|   | 8 hours (unless stated differently).  |  |
| Other Operational Condition                       | ns affecting Exposure   |  |
|   | vated temperature (> 20°C above ambient temperature).   |  |
| Assumes a good basic standa                       | ard of occupational hygiene is implemented.   |  |
| Contributing Scenarios                            | Risk Management Measures  |  |
| General measures (Aspiration)                     | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |
| Section 2.2                                       | Control of Environmental Exposure   |  |
| Not applicable.                                   |   |  |

| SECTION 3  | EXPOSURE ESTIMATION |
|--|---------------------|
| Section 3.1 - Health   |                     |
| Not applicable.  |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

## ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Exposure ocernatio - Worker |  |
|-----------------------------|--|
| 30000010517                 |  |
| 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  |  |
| <b>Product Characteristics</b>                    |   |  |
| Physical form of product                          | Liquid, vapour pressure < 0.5 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).  |  |
| <b>Other Operational Conditio</b>                 | ns affecting Exposure   |  |
| Operation is carried out at ele                   | evated temperature (> 20°C above ambient temperature).  |  |
| Assumes a good basic stand                        | ard of occupational hygiene is implemented.   |  |
| Contributing Scenarios                            | Risk Management Measures  |  |
| General measures (Aspiration)                     | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |
| Section 2.2                                       | Control of Environmental Exposure   |  |
| Not applicable.                                   | · I   |  |

| SECTION 3  | EXPOSURE ESTIMATION |
|--|---------------------|
| Section 3.1 - Health   |                     |
| Not applicable.  |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| _ |
|---|

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

## ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| 30000010518      |   |
|------------------|---|
| 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 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 Condition                       | ns affecting Exposure   |  |
| Operation is carried out at ele                   | evated temperature (> 20°C above ambient temperature).  |  |
| Assumes a good basic standa                       | ard of occupational hygiene is implemented.   |  |
| Contributing Scenarios                            | Risk Management Measures  |  |
| General measures (Aspiration)                     | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |
| Section 2.2                                       | Control of Environmental Exposure   |  |
|   |   |  |

| SECTION 3  | EXPOSURE ESTIMATION |
|--|---------------------|
| Section 3.1 - Health   |                     |
| Not applicable.  |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

## ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| 30000010519      |  |
|------------------|--|
| 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 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 Condition                       | ns affecting Exposure   |  |
| Operation is carried out at ele                   | evated temperature (> 20°C above ambient temperature).  |  |
| Assumes a good basic standa                       | ard of occupational hygiene is implemented.   |  |
| Contributing Scenarios                            | Risk Management Measures  |  |
| General measures (Aspiration)                     | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |
| Section 2.2                                       | Control of Environmental Exposure   |  |
| Not applicable.                                   |   |  |

| SECTION 3  | EXPOSURE ESTIMATION |
|--|---------------------|
| Section 3.1 - Health   |                     |
| Not applicable.  |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

## ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| 30000010522      |   |
|------------------|---|
| 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                                       |
| Scope of process | Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers. |

| SECTION 2   | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |  |  |
|---|---|--|--|
| Section 2.1                                       | Control of Worker Exposure  |  |  |
| Product Characteristics                           |   |  |  |
| Physical form of product                          | Liquid, vapour pressure < 0.5 kPa at STP  |  |  |
| Concentration of the Substance in Mixture/Article | Covers 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 Condition                       | ns affecting Exposure   |  |  |
| Operation is carried out at ele                   | evated temperature (> 20°C above ambient temperature).  |  |  |
| Assumes a good basic standa                       | ard of occupational hygiene is implemented.   |  |  |
| Contributing Scenarios                            | Risk Management Measures  |  |  |
| General measures (Aspiration)                     | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |  |
| Section 2.2                                       | Control of Environmental Exposure   |  |  |
| Not applicable.                                   | ·   |  |  |

| SECTION 3 EXPOSURE ESTIMATION  |  |  |
|--|--|--|
| Section 3.1 - Health   |  |  |
| Not applicable.  |  |  |
| Risk Management Measures are based on qualitative risk characterisation. |  |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |  |
|----------------------|---|--|
| Section 4.1 - Health |   |  |
| Not applicable.      |   |  |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

SECTION 2

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

**Exposure Scenario - Worker** 

| 300000010523     |   |
|------------------|---|
| 300000010523     |   |
| OF OTION 4       | EVECUEE COENTRE   |
| 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  |
|                  | 20 V 0 0 0 P2 N 0 0.100.V 1   |
| 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. |
|                  |   |

OPERATIONAL CONDITIONS AND RISK MANAGEMENT

| 020110112  | MEASURES  |  |  |  |
|--|---|--|--|--|
| Section 2.1  | Control of Worker Exposure  |  |  |  |
| Product Characteristics  | •   |  |  |  |
| Physical form of product   | Liquid, vapour pressure < 0.5 kPa at STP  |  |  |  |
| Concentration of the Substance in Mixture/Article  | Covers percentage substance in the product up to 100%., Unless stated otherwise.,   |  |  |  |
| Frequency and Duration of  | Use   |  |  |  |
|  | 8 hours (unless stated differently).  |  |  |  |
| <b>Other Operational Conditio</b>  | ns affecting Exposure   |  |  |  |
| Operation is carried out at elevated temperature (> 20°C above ambient temperature). Assumes a good basic standard of occupational hygiene is implemented. |   |  |  |  |
| Contributing Scenarios   | Risk Management Measures  |  |  |  |
| General measures (Aspiration)  | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |  |  |
| Section 2.2  | Control of Environmental Exposure   |  |  |  |
| Not applicable.  |   |  |  |  |

| SECTION 3 EXPOSURE ESTIMATION  |  |  |
|--|--|--|
| Section 3.1 - Health   |  |  |
| Not applicable.  |  |  |
| Risk Management Measures are based on qualitative risk characterisation. |  |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Exposure Scenario - worker |   |
|----------------------------|---|
| 30000010525                |   |
|                            |   |
| SECTION 1                  | EXPOSURE SCENARIO TITLE   |
| Title                      | Road and construction applications- Professional  |
| Use Descriptor             | Sector of Use: SU22 Process Categories: 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 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   |  |  |
|                               | 8 hours (unless stated differently).  |  |  |
| Other Operational Conditio    |   |  |  |
|                               | evated temperature (> 20°C above ambient temperature).  |  |  |
| Assumes a good basic stand    | Assumes a good basic standard of occupational hygiene is implemented.   |  |  |
| Contributing Scenarios        | Risk Management Measures  |  |  |
| General measures (Aspiration) | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |  |
|                               |   |  |  |
| Section 2.2                   | Control of Environmental Exposure   |  |  |

| SECTION 3  | EXPOSURE ESTIMATION |  |
|--|---------------------|--|
| Section 3.1 - Health   |                     |  |
| Not applicable.  |                     |  |
| Risk Management Measures are based on qualitative risk characterisation. |                     |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

## ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

### **Exposure Scenario - Worker**

| 30000010527   |  |
|---|--|
|   |  |
|   |  |
| EXPOSURE SCENARIO TITLE   |  |
| Use in laboratories- Industrial   |  |
| Sector of Use: SU3  |  |
| Process Categories: PROC10, PROC15  |  |
| Environmental Release Categories: ERC2, ERC4  |  |
| 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 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   |  |
|                            | 8 hours (unless stated differently).  |  |
| Other Operational Conditio | ns affecting Exposure   |  |
|                            | evated temperature (> 20°C above ambient temperature).  |  |
| Assumes a good basic stand | ard of occupational hygiene is implemented.   |  |
| Contributing Scenarios     | Risk Management Measures  |  |
| General measures (Aspira-  | The H304 hazard statement (May be fatal if swallowed and  |  |
| tion)                      | enters airways) relates to potential for aspiration, a non-   |  |
|                            | quantifiable hazard determined by physico-chemical proper-  |  |
|                            | ties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures |  |
|                            |   |  |
|                            |   |  |
|                            |   |  |
|                            |   |  |
|                            | need to be implemented to control the aspiration hazard.  Do not ingest. If swallowed, then seek immediate medical  |  |
|                            | assistance  |  |
| Section 2.2                | Control of Environmental Exposure   |  |
| Not applicable.            |   |  |

| SECTION 3  | EXPOSURE ESTIMATION |  |  |
|--|---------------------|--|--|
| Section 3.1 - Health   |                     |  |  |
| Not applicable.  |                     |  |  |
| Risk Management Measures are based on qualitative risk characterisation. |                     |  |  |
|  | ·                   |  |  |

### Section 3.2 -Environment

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| Not applicable. |  |  |  |
|-----------------|--|--|--|
|                 |  |  |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

SECTION 2

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

**Exposure Scenario - Worker** 

| 300000010528     |   |
|------------------|---|
| SECTION 1        | EXPOSURE SCENARIO TITLE   |
| Title            | Use in laboratories- Professional   |
| Use Descriptor   | Sector of Use: SU22 Process Categories: PROC10, 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.            |

**OPERATIONAL CONDITIONS AND RISK MANAGEMENT** 

| 0 4' 0.4  |   |  |  |
|---|---|--|--|
| Section 2.1   | Control of Worker Exposure  |  |  |
| Product Characteristics   |   |  |  |
| Physical form of product  | Liquid, vapour pressure < 0.5 kPa at STP  |  |  |
| Concentration of the Sub-   | Covers 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).  |  |  |
| <b>Other Operational Conditio</b>                                     | ns affecting Exposure   |  |  |
| Operation is carried out at ele                                       | evated temperature (> 20°C above ambient temperature).  |  |  |
| Assumes a good basic standard of occupational hygiene is implemented. |   |  |  |
| Contributing Scenarios  | Risk Management Measures  |  |  |
| General measures (Aspiration)   | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |  |
| Section 2.2   | Control of Environmental Exposure   |  |  |
| Not applicable.   |   |  |  |

| SECTION 3  | EXPOSURE ESTIMATION |  |
|--|---------------------|--|
| Section 3.1 - Health   |                     |  |
| Not applicable.  |                     |  |
| Risk Management Measures are based on qualitative risk characterisation. |                     |  |
|  | ·                   |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |
|                      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Exposure Scenario - Worker |   |  |
|----------------------------|---|--|
| 300000010529               |   |  |
| SECTION 1                  | EXPOSURE SCENARIO TITLE   |  |
| Title                      | Water treatment chemicals- Industrial   |  |
| Use Descriptor             | Sector of Use: SU10 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC13 Environmental Release Categories: ERC3, ERC4, ESVOC SpERC 3.22a.v1 |  |
| Scope of process           | Covers the use of the substance for the treatment of water in open and closed systems.  |  |

| SECTION 2   | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |                   |  |
|---|---|-------------------|--|
| Section 2.1   | Control of Worker Exposure  |                   |  |
| Product Characteristics   | •   |                   |  |
| Physical form of product  | Liquid, vapour pressure < 0.5 kPa at STP  |                   |  |
| Concentration of the Sub-   | Covers percentage substance in the proc   | duct up to 100%., |  |
| stance in Mixture/Article   | Unless stated otherwise.,   |                   |  |
| Frequency and Duration of   | Use   |                   |  |
|   | 8 hours (unless stated differently).  |                   |  |
| Other Operational Conditio  | ns affecting Exposure   |                   |  |
| Operation is carried out at ele                                       | evated temperature (> 20°C above ambient  | t temperature).   |  |
| Assumes a good basic standard of occupational hygiene is implemented. |   |                   |  |
| Contributing Scenarios  | Risk Management Measures  |                   |  |
| General measures (Aspiration)   | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |                   |  |
| Section 2.2   | Control of Environmental Exposure   |                   |  |
| Not applicable.   |   |                   |  |

| SECTION 3  | EXPOSURE ESTIMATION |
|--|---------------------|
| Section 3.1 - Health   |                     |
| Not applicable.  |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |
| ·  |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| 30000010530      |  |
|------------------|--|
| 300000010330     |  |
| SECTION 1        | EXPOSURE SCENARIO TITLE  |
| Title            | Water treatment chemicals- Professional  |
| Use Descriptor   | Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC13 Environmental Release Categories: ERC8f, ESVOC SpERC 8.22b.v1 |
| Scope of process | Covers the use of the substance for the treatment of water in open and closed systems.   |

| SECTION 2   | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |  |  |
|---|---|--|--|
| Section 2.1   | Control of Worker Exposure  |  |  |
| Product Characteristics   | <b>,</b>  |  |  |
| Physical form of product  | Liquid, vapour pressure < 0.5 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 Conditio  | ns affecting Exposure   |  |  |
|   | evated temperature (> 20°C above ambient temperature).  |  |  |
| Assumes a good basic standard of occupational hygiene is implemented. |   |  |  |
| Contributing Scenarios  | Risk Management Measures  |  |  |
| General measures (Aspiration)   | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |  |
| Section 2.2   | Control of Environmental Exposure   |  |  |
| Not applicable.   |   |  |  |

| SECTION 3  | EXPOSURE ESTIMATION |
|--|---------------------|
| Section 3.1 - Health   |                     |
| Not applicable.  |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |
| ·  |                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Exposure ocenano - Worker |   |
|---------------------------|---|
| 30000010531               |   |
|                           |   |
| SECTION 1                 | EXPOSURE SCENARIO TITLE   |
| Title                     | Mining chemicals- Industrial  |
| Use Descriptor            | Sector of Use: SU10   |
|                           | Process Categories: PROC1, PROC2, PROC3, PROC4,   |
|                           | PROC5, PROC8a, PROC8b, PROC9  |
|                           | Environmental Release Categories: ERC4, ESVOC SpERC   |
|                           | 4.23.v1   |
|                           |   |
| Scope of process          | Covers the use of the substance in extraction processes at mining operations, including material transfers, winning and |
|                           | separation activities, and substance recovery and disposal.   |

| SECTION 2                     | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |                |  |  |
|-------------------------------|---|----------------|--|--|
| Section 2.1                   | Control of Worker Exposure  |                |  |  |
| Product Characteristics       |   |                |  |  |
| Physical form of product      | Liquid, vapour pressure < 0.5 kPa at STP  |                |  |  |
| Concentration of the Sub-     | Covers percentage substance in the product  | t up to 100%., |  |  |
| stance in Mixture/Article     | Unless stated otherwise.,   |                |  |  |
| Frequency and Duration of     |   |                |  |  |
|                               | 8 hours (unless stated differently).  |                |  |  |
| Other Operational Conditio    |   |                |  |  |
|                               | evated temperature (> 20°C above ambient te   | emperature).   |  |  |
| Assumes a good basic standa   | Assumes a good basic standard of occupational hygiene is implemented.   |                |  |  |
| Contributing Scenarios        | Risk Management Measures  |                |  |  |
| General measures (Aspiration) | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |                |  |  |
| Section 2.2                   | Control of Environmental Exposure   |                |  |  |
| Not applicable.               |   |                |  |  |

| SECTION 3  | EXPOSURE ESTIMATION |  |
|--|---------------------|--|
| Section 3.1 - Health   |                     |  |
| Not applicable.  |                     |  |
| Risk Management Measures are based on qualitative risk characterisation. |                     |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

**Exposure Scenario - Consumer** 

| 30000010505                       |   |  |
|-----------------------------------|---|--|
| 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  |
| Product Characteristics       |   |
| Product Categories            | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |
| General measures (Aspiration) | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |

| Section 2.2     | Control of Environmental Exposure |  |
|-----------------|-----------------------------------|--|
| Not applicable. |                                   |  |

| SECTION 3  | EXPOSURE ESTIMATION |  |
|--|---------------------|--|
| Section 3.1 - Health   |                     |  |
| Not applicable.  |                     |  |
| Risk Management Measures are based on qualitative risk characterisation. |                     |  |
| •  |                     |  |

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE |
|-----------|---------------------------------------|
|           | EXPOSURE SCENARIO                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Section 4.1 - Health |  |
|----------------------|--|
| Not applicable.      |  |
|                      |  |

Section 4.2 -Environment

Not applicable.

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| 30000010508      |   |  |
|------------------|---|--|
| 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, PC9b, PC9c, PC24, PC35, PC38 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4c.v1          |  |
| Scope of process | Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products. |  |

| SECTION 2                     | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |  |
|-------------------------------|---|--|
| Section 2.1                   | Control of Consumer Exposure  |  |
| Product Characteristics       |   |  |
| Product Categories            | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |  |
| General measures (Aspiration) | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |

| Section 2.2     | Control of Environmental Exposure |  |
|-----------------|-----------------------------------|--|
| Not applicable. |                                   |  |

| SECTION 3  | EXPOSURE ESTIMATION |  |
|--|---------------------|--|
| Section 3.1 - Health   |                     |  |
| Not applicable.  |                     |  |
| Risk Management Measures are based on qualitative risk characterisation. |                     |  |
|  |                     |  |

| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE |  |
|-----------|---------------------------------------|--|
|           | EXPOSURE SCENARIO                     |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Section 4.1 - Health |  |
|----------------------|--|
| Not applicable.      |  |
|                      |  |

| Section 4.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Exposure ocenario - consumer |   |  |
|------------------------------|---|--|
| 30000010512                  |   |  |
| 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  |
| <b>Product Characteristics</b> |   |
| Product Categories             | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |
| General measures (Aspiration)  | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |

| Section 2.2     | Control of Environmental Exposure |  |
|-----------------|-----------------------------------|--|
| Not applicable. |                                   |  |

| SECTION 3  | EXPOSURE ESTIMATION |  |
|--|---------------------|--|
| Section 3.1 - Health   |                     |  |
| Not applicable.  |                     |  |
| Risk Management Measures are based on qualitative risk characterisation. |                     |  |
|  | ·                   |  |

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| 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 D 100S

| rsion<br>S | Revision Date: 23.11.2023 | SDS Number:<br>800001014046 | Date of last issue: 07.03.2023<br>Print Date 30.11.2023 |  |
|------------|---------------------------|-----------------------------|---|--|
| Not a      | pplicable.                |                             |   |  |
| Secti      | ion 4.2 -Environmen       | ıt                          |   |  |
|            | ipplicable.               |                             |   |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Exposure ocerano - consumer |   |  |
|-----------------------------|---|--|
| 30000010513                 |   |  |
| 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   |  |
| 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  |  |
| <b>Product Characteristics</b> |   |  |
| Product Categories             | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |  |
| General measures (Aspiration)  | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |  |

| Section 2.2     | Control of Environmental Exposure |  |
|-----------------|-----------------------------------|--|
| Not applicable. |                                   |  |

| SECTION 3  | EXPOSURE ESTIMATION |  |
|--|---------------------|--|
| Section 3.1 - Health   |                     |  |
| Not applicable.  |                     |  |
| Risk Management Measures are based on qualitative risk characterisation. |                     |  |
|  | ·                   |  |

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| 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 D 100S

| ersion<br>3 | Revision Date: 23.11.2023 | SDS Number:<br>800001014046 | Date of last issue: 07.03.2023<br>Print Date 30.11.2023 |  |
|-------------|---------------------------|-----------------------------|---|--|
| Not a       | ipplicable.               |                             |   |  |
| 11010       | принавно.                 |                             |   |  |
| Secti       | ion 4.2 -Environmen       | t                           |   |  |
| Not a       | ipplicable.               |                             |   |  |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| 30000010521      |   |
|------------------|---|
| 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  |
| Product Characteristics       |   |
| Product Categories            | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |
| General measures (Aspiration) | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |

| Section 2.2     | Control of Environmental Exposure |  |
|-----------------|-----------------------------------|--|
| Not applicable. |                                   |  |

| SECTION 3 EXPOSURE ESTIMATION  |  |
|--|--|
| Section 3.1 - Health   |  |
| Not applicable.  |  |
| Risk Management Measures are based on qualitative risk characterisation. |  |
|  |  |

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

Section 4.2 -Environment

Not applicable.

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| 30000010524      |   |
|------------------|---|
| 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  |
| <b>Product Characteristics</b> |   |
| Product Categories             | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |
| General measures (Aspiration)  | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |

| Section 2.2     | Control of Environmental Exposure |  |
|-----------------|-----------------------------------|--|
| Not applicable. |                                   |  |

| SECTION 3  | EXPOSURE ESTIMATION |
|--|---------------------|
| Section 3.1 - Health   |                     |
| Not applicable.  |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4            | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
|----------------------|---|
| Section 4.1 - Health |   |
| Not applicable.      |   |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

Section 4.2 - Environment

Not applicable.

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| 30000010526      |   |
|------------------|---|
| SECTION 1        | EXPOSURE SCENARIO TITLE   |
| Title            | Other Consumer Uses - Consumer  |
| Use Descriptor   | Sector of Use: SU21 Product Categories: PC28, PC39 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.16.v1  |
| Scope of process | Consumer uses e.g. as a carrier in cosmetics/personal care products, perfumes and fragrances. Note: For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation. |

| SECTION 2                     | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |
|-------------------------------|---|
| Section 2.1                   | Control of Consumer Exposure  |
| Product Characteristics       |   |
| Product Categories            | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES   |
| General measures (Aspiration) | The H304 hazard statement (May be fatal if swallowed and enters airways) relates to potential for aspiration, a non-quantifiable hazard determined by physico-chemical properties (i.e. viscosity) that can occur during ingestion and also if it is vomited following ingestion. A DNEL cannot be derived. Risks from the physicochemical hazards of substances can be controlled by implementing risk management measures. For substances classified as H304, the following measures need to be implemented to control the aspiration hazard. Do not ingest. If swallowed, then seek immediate medical assistance |

| Section 2.2     | Control of Environmental Exposure |  |
|-----------------|-----------------------------------|--|
| Not applicable. |                                   |  |

| SECTION 3  | EXPOSURE ESTIMATION |
|--|---------------------|
| Section 3.1 - Health   |                     |
| Not applicable.  |                     |
| Risk Management Measures are based on qualitative risk characterisation. |                     |
| · ·  |                     |

| Section 3.2 -Environment |  |
|--------------------------|--|
| Not applicable.          |  |
|                          |  |

| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE |
|-----------|---------------------------------------|
|           | EXPOSURE SCENARIO                     |

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

# ShellSol D 100S

Version Revision Date: SDS Number: Date of last issue: 07.03.2023

2.3 23.11.2023 800001014046 Print Date 30.11.2023

| Section 4.1 - Health |  |
|----------------------|--|
| Not applicable.      |  |
|                      |  |

| Section 4.2 -Environme | ent |
|------------------------|-----|
| Not applicable.        |     |