NAFOL 1014

Version: 7.09 **Revision Date 2020/05/25**

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name **NAFOL 1014**

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

Use
Industrial use
raw material for washing and cleaning agents
raw material for textile auxiliary agents
raw material for synthesis processes in the chemical industry

Uses advised against

1.3 Details of the supplier of the safety data sheet

Company
SASOL Germany GmbH
Anckelmannsplatz 1
20537 Hamburg
Germany

Telephone: +49 40 63684-1000
Telefax: +49 40 63684-3700

Information (Product safety):
Telephone: + 49 (0) 23 65 - 49 47 05
Telefax: + 49 (0) 23 65 - 49 92 40

E-mail address msds-info.germany@de.sasol.com

1.4 Emergency telephone number

Emergency telephone number + 49 (0) 5 51 - 1 92 40 (GIZ-Nord Poisons Centre)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation Category 2	Causes serious eye irritation.
Short-term (acute) aquatic hazard Category 1	Very toxic to aquatic life.
Long-term (chronic) aquatic hazard Category 1	Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word Warning

Hazard statements

H319	Causes serious eye irritation.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P264	Wash skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear eye protection/ face protection.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P391	Collect spillage.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

None known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture in the meaning of regulation (EC) 1907/2006.

CHEMICAL CHARACTERIZATION

Alcohol blend, C10-14

COMPONENTS TO BE NAMED IN ACCORDANCE WITH REGULATION (EC) 1907/2006 AS WELL AS OTHER HAZARDOUS INGREDIENTS AND CONTAINED SUBSTANCES WITH WORK PLACE LIMIT VALUES

dodecan-1-ol

content: >= 50 - < 70 % **component type:** Active ingredient

EC-No.: 203-982-0 **Index-No.:** **CAS-No.:** 112-53-8
REACH No.: 01-2119485976-15-0000
Substance name (REACH / CLP): dodecan-1-ol

Classification (Regulation (EC) No 1272/2008):	Eye Irrit. 2	H319	
	Aquatic Acute	1	H400
	Aquatic Chronic	2	H411

tetradecanol

content: >= 30 - < 50 % **component type:** Active ingredient

EC-No.: 204-000-3 **Index-No.:** **CAS-No.:** 112-72-1
REACH No.: 01-2119485910-33-0000
Substance name (REACH / CLP): tetradecanol

Classification (Regulation (EC) No 1272/2008):	Eye Irrit. 2	H319	
	Aquatic Chronic	1	H410

decan-1-ol

content: >= 10 - < 20 % **component type:** Active ingredient

EC-No.: 203-956-9 **Index-No.:** **CAS-No.:** 112-30-1
REACH No.: 01-2119480407-35-XXXX
Substance name (REACH / CLP): decan-1-ol

Classification (Regulation (EC) No 1272/2008):	Eye Irrit. 2	H319	
	Aquatic Chronic 3	H412	

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice	If you feel unwell, seek medical advice (show the label where possible). Take off all contaminated clothing immediately.
If inhaled	Remove from exposure, lie down. If breathing is irregular or stopped, administer artificial respiration. Monitor breathing, give oxygen if necessary. Consult a physician.
In case of skin contact	Wash off with plenty of water.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed	Consult a physician. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Most important symptoms and effects, both acute and delayed	Symptoms: No information available. Risks: No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Indication of any immediate medical attention and special treatment needed	Treatment: No information available.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Water spray, Dry powder, Foam, Carbon dioxide (CO2)

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	Dangerous gases or fumes may occur in case of fire.

5.3 Advice for firefighters

Special protective equipment for firefighters	Use personal protective equipment. Wear self-contained breathing apparatus for firefighting if necessary.
Further information	Cool closed containers exposed to fire with water spray. Closed container may rupture if strongly heated. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	Use personal protective equipment.
Special precautions	Forms slippery/greasy layers with water. Spilling onto the container's outside will make container slippery. Danger of slipping after spill or leakage.

6.2 Environmental precautions

Environmental precautions	Do not let product enter drains. Do not flush into surface water. Avoid subsoil penetration. Do not allow material to contaminate ground water system.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling	Wear personal protective equipment.
Advice on protection against fire and explosion	No special protective measures against fire required.
Fire-fighting class	B: Fires involving liquids or liquid containing substances. Also includes substances which become liquid at elevated temperatures.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	No special storage conditions required.
Further information on storage conditions	Protect from frost, heat and sunlight.
Other data	Stable at normal ambient temperature and pressure.

7.3 Specific end use(s)

Specific use(s)	This information is not available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

National occupational exposure limits

No data available

EUROPEAN OCCUPATIONAL EXPOSURE LIMITS

No data available

DERIVED NO EFFECT LEVEL (DNEL)

Substance name: dodecan-1-ol			
End Use	**Exposure routes**	**Value**	**Note**
Workers	dermal, Acute/short-term exposure - systemic effects		No hazard identified
	Inhalation, Acute/short-term exposure - systemic effects		No hazard identified
	dermal, Acute/short-term exposure - local effects		No hazard identified
	Inhalation, Acute/short-term exposure - local effects		No hazard identified
	dermal, long-term exposure - systemic effects	89 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects	313 mg/m3	
	dermal, long-term exposure - local effects		No hazard identified
	Inhalation, long-term exposure - local effects	155 mg/m3	
Consumers	dermal, Acute/short-term exposure - systemic effects		No hazard identified
	Inhalation, Acute/short-term exposure - systemic effects		No hazard identified
	Oral, Acute/short-term exposure - systemic effects		No hazard identified
	dermal, Acute/short-term exposure - local effects		No hazard identified
	Inhalation, Acute/short-term exposure - local effects		No hazard identified
	dermal, long-term exposure - systemic effects	44.5 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects	77 mg/m3	
	Oral, long-term exposure - systemic effects	44.5 mg/kg	based on body weight and day
	dermal, long-term exposure - local effects		Not relevant / Not applicable
	Inhalation, long-term exposure - local effects		No hazard identified

	Eye contact,		Low hazard
Workers	Eye contact,		Low hazard

Substance name: tetradecanol			
End Use	**Exposure routes**	**Value**	**Note**
Workers	dermal, Acute/short-term exposure - systemic effects		No hazard identified
	Inhalation, Acute/short-term exposure - systemic effects	220 mg/m3	
	dermal, Acute/short-term exposure - local effects		No hazard identified
	Inhalation, Acute/short-term exposure - local effects		No hazard identified
	dermal, long-term exposure - systemic effects	89 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects	313 mg/m3	
	dermal, long-term exposure - local effects		No hazard identified
	Inhalation, long-term exposure - local effects	178 mg/m3	
Consumers	dermal, Acute/short-term exposure - systemic effects		No hazard identified
	Inhalation, Acute/short-term exposure - systemic effects		No hazard identified
	Oral, Acute/short-term exposure - systemic effects		No hazard identified
	dermal, Acute/short-term exposure - local effects		No hazard identified
	Inhalation, Acute/short-term exposure - local effects		Not relevant / Not applicable
	dermal, long-term exposure - systemic effects	44.4 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects	77 mg/m3	
	Oral, long-term exposure - systemic effects	44.4 mg/kg	based on body weight and day
	dermal, long-term exposure - local effects		No hazard identified
	Inhalation, long-term exposure - local effects		No hazard identified
Workers	Eye contact,		Low hazard
Consumers	Eye contact,		Low hazard

Substance name: decan-1-ol			
End Use	**Exposure routes**	**Value**	**Note**
Workers	dermal, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	Inhalation, Acute/short-term exposure - systemic effects		Not relevant / Not applicable

	dermal, Acute/short-term exposure - local effects		Not relevant / Not applicable
	Inhalation, Acute/short-term exposure - local effects		Not relevant / Not applicable
	dermal, long-term exposure - systemic effects	250 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects	176 mg/m3	
	dermal, long-term exposure - local effects	0.19 mg/cm2	
	Inhalation, long-term exposure - local effects	129 mg/m3	
Consumers	dermal, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	Inhalation, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	Oral, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	dermal, Acute/short-term exposure - local effects		Not relevant / Not applicable
	Inhalation, Acute/short-term exposure - local effects		Not relevant / Not applicable
	dermal, long-term exposure - systemic effects	125 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects	43.5 mg/m3	
	Oral, long-term exposure - systemic effects	12.5 mg/kg	based on body weight and day
	dermal, long-term exposure - local effects	0.067 mg/cm2	
	Inhalation, long-term exposure - local effects		Not relevant / Not applicable

PREDICTED NO EFFECT CONCENTRATION (PNEC)

Substance name: dodecan-1-ol		
Environmental Compartment	**Value**	**Note**
Fresh water	0.001 mg/l	
Marine water	0 mg/l	
Sewage treatment plant		No hazard identified
Fresh water sediment	0.666 mg/kg	based on dry weight
Marine sediment	0.067 mg/kg	based on dry weight
Soil	0.132 mg/kg	based on dry weight
Air		No hazard identified
food		Not relevant / Not applicable

Substance name: tetradecanol		
Environmental Compartment	**Value**	**Note**
Fresh water	0.001 mg/l	
Marine water	0 mg/l	
Sewage treatment plant		No hazard identified
Air		No hazard identified
Fresh water sediment	2.14 mg/kg	based on dry weight
Marine sediment	0.214 mg/kg	based on dry weight
Soil	0.428 mg/kg	based on dry weight
food		No hazard identified

Substance name: decan-1-ol		
Environmental Compartment	**Value**	**Note**
Fresh water	0.042 mg/l	
Marine water	0.0042 mg/l	
intermittent release	0.08 mg/l	
Sewage treatment plant	1.5 mg/l	
Fresh water sediment	7 mg/kg	based on dry weight
Marine sediment	0.7 mg/kg	based on dry weight
Soil	1.27 mg/kg	based on dry weight
Air		Not relevant / Not applicable
food		Not relevant / Not applicable

8.2 Exposure controls

ENGINEERING MEASURES

Provide sufficient air exchange and/or exhaust in work rooms.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection	No personal respiratory protective equipment normally required. In inadequately ventilated areas, where workplace limits are exceeded, where unpleasant odours exist or where aerosols are in use, or smoke and mist occur, use self-contained breathing apparatus or breathing apparatus with a type A filter or appropriate combined filter (e.g. where aerosols are in use, or smoke and mist occur, A-P2 or ABEK-P2), in compliance with EN 141.
Hand protection	The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other., Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time., Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g. temperature). **gloves suitable for permanent contact:** Material: Nitrile rubber/nitrile latex Break through time: >= 480 min Layer thickness: 0.35 mm Material: butyl-rubber Break through time: >= 480 min Layer thickness: 0.5 mm **gloves suitable for splash protection:** Material: Natural rubber/natural latex Break through time: >= 60 min Layer thickness: 0.5 mm
Eye protection	Tightly fitting safety goggles
Skin and body protection	Wear suitable protective equipment.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feedingstuffs.
Protective measures	Avoid contact with eyes. Wear suitable gloves and eye/face protection.

ENVIRONMENTAL EXPOSURE CONTROLS

General advice	Do not let product enter drains. Do not flush into surface water. Avoid subsoil penetration. Do not allow material to contaminate ground water system.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	liquid; 20 °C; 1,013 hPa
Form	liquid
Colour	colourless
Odour	characteristic

Odour Threshold	No data available
pH	Justification:, Not applicable, insoluble
Solidification / Setting point	ca. 14 - 18 °C
Boiling point/boiling range	ca. 230 - 285 °C
Flash point	ca. 120 °C; DIN 51758
Evaporation rate	No data available
Flammability (solid, gas)	not applicable (liquid)
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure	ca. < 1.000 hPa; 20 °C
Relative vapour density	
Density	ca.0.8 g/cm3; 20 °C; DIN 51757
Water solubility	insoluble
Partition coefficient: n-octanol/water	not applicable (mixture)
Ignition temperature	ca. 255 °C
Auto-ignition temperature	not auto-flammable
Viscosity, dynamic	ca. 10.2 mPas; 20 °C
Explosive properties	Constituents do not contain chemical groups associated with explosivity.
Oxidizing properties	not expected based on structure and functional groups

9.2 Other data

None known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Note	Stable at normal ambient temperature and pressure.

10.2 Chemical stability

Note	No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions	Hazardous decomposition products formed under fire conditions.

10.4 Conditions to avoid

Conditions to avoid	Direct heating, dirt, chemical contamination, sunlight, UV or ionising radiation.

10.5 Incompatible materials to avoid

10.6 Hazardous decomposition products

Hazardous decomposition products	No decomposition if stored and applied as directed.

Thermal decomposition Stable under normal conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity

decan-1-ol:
LD50 Rat: > 5.000 mg/kg; OPPTS 870.1100
(literature value)
Based on available data, the classification criteria are not met.

dodecan-1-ol:
LD50 Rat: > 2,000 mg/kg; OECD Test Guideline 401
(literature value)
Based on available data, the classification criteria are not met.

tetradecanol:
LD50 Rat: > 5,000 mg/kg
Based on available data, the classification criteria are not met.

Acute inhalation toxicity

decan-1-ol:
LC50 Rat: > 71 mg/l; 1 h
Target Organs: Lungs
Symptoms: Salivation, Drowsiness, Shortness of breath
(literature value)
Based on available data, the classification criteria are not met.

dodecan-1-ol:
LC50 Rat: > 71 mg/l; 1 h
Target Organs: Lungs
Symptoms: Salivation, Drowsiness, Loss of balance, Shortness of breath
The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).
Test substance: Decan-1-ol
Based on available data, the classification criteria are not met.

tetradecanol:
LC50 Rat: > 1.5 mg/l; 1 h
Based on available data, the classification criteria are not met.
The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity

decan-1-ol:
LD50 Dermal Rabbit: > 5,000 mg/kg; OPPTS 870.1200
Target Organs: Skin
Symptoms: Local irritation
(literature value)
Based on available data, the classification criteria are not met.

dodecan-1-ol:
LD50 Rabbit: > 5,000 mg/kg;
Based on available data, the classification criteria are not met.

tetradecanol:
LD50 Rabbit: > 5,000 mg/kg;
Target Organs: Skin
Symptoms: Local irritation
Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Skin irritation

decan-1-ol:
Rabbit: moderately irritating; OPPTS 870.2500
(literature value)
Based on available data, the classification criteria are not met.

dodecan-1-ol:
Human: not irritating; OECD Test Guideline 404
(literature value)
Based on available data, the classification criteria are not met.

tetradecanol:
Human: not irritating
(literature value)
Based on available data, the classification criteria are not met.

Human experience -Skin contact

decan-1-ol:
not irritating
(literature value)

Serious eye damage/eye irritation

Eye irritation

decan-1-ol:
Rabbit: irritating; OPPTS 870.2400
(literature value)
Causes serious eye irritation.

dodecan-1-ol:
Rabbit: irritating; OECD Test Guideline 405
Causes serious eye irritation.

tetradecanol:
Rabbit: irritating; OECD Test Guideline 405
Causes serious eye irritation.

Respiratory or skin sensitisation

Sensitisation

decan-1-ol:
Buehler Test Guinea pig: not sensitizing; OPPTS 870.2600
(literature value)
Based on available data, the classification criteria are not met.

dodecan-1-ol:
Maximisation Test Guinea pig: not sensitizing; OECD Test Guideline 406
(literature value)
Based on available data, the classification criteria are not met.

tetradecanol:
Maximisation Test Guinea pig: not sensitizing; OECD Test Guideline 406
(literature value)
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity in vitro

decan-1-ol:
In vitro tests did not show mutagenic effects
(literature value)
Category approach

dodecan-1-ol:
In vitro tests did not show mutagenic effects
(literature value)
Category approach

tetradecanol:
In vitro tests did not show mutagenic effects
(literature value)
Category approach

Genotoxicity in vivo

decan-1-ol:
In vivo tests did not show mutagenic effects
(literature value)
Category approach

dodecan-1-ol:
In vivo tests did not show mutagenic effects
(literature value)

Category approach

tetradecanol:
In vivo tests did not show mutagenic effects
(literature value)
Category approach

Remarks

decan-1-ol:
Based on available data, the classification criteria are not met.

dodecan-1-ol:
Based on available data, the classification criteria are not met.

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

Carcinogenicity

Carcinogenicity

decan-1-ol:
The substance has been shown to be not genotoxic, therefore it is not expected to have a carcinogenic potential.
Category approach

dodecan-1-ol:
The substance has been shown to be not genotoxic, therefore it is not expected to have a carcinogenic potential.
Category approach

tetradecanol:
The substance has been shown to be not genotoxic, therefore it is not expected to have a carcinogenic potential.
Category approach

Reproductive toxicity

Reproductive toxicity

decan-1-ol:
Rat; Oral
Repeated dose toxicity studies gave no indication of adverse effects on reproductive organs.
(literature value)
Category approach

dodecan-1-ol:
Rat; Oral; 55-day
(literature value)
Animal testing did not show any effects on fertility.
literature value

tetradecanol:
Rat; Oral; 55-day
Animal testing did not show any effects on fertility.
(literature value)
The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).
Test substance: dodecan-1-ol

RemarksReproductive toxicity

decan-1-ol:
Based on available data, the classification criteria are not met.

dodecan-1-ol:
Based on available data, the classification criteria are not met.

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

Teratogenicity

decan-1-ol:
Rat; Oral; OECD Test Guideline 414
Did not show teratogenic effects in animal experiments.
(literature value)
The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).

Test substance: octan-1-ol

dodecan-1-ol:
Rat; Oral; OECD Test Guideline 422
(literature value)
Did not show teratogenic effects in animal experiments.

tetradecanol:
Rat; Oral; OECD Test Guideline 422
Did not show teratogenic effects in animal experiments.
(literature value)
The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).
Test substance: dodecan-1-ol

Remarks-Teratogenicity

decan-1-ol:
Based on available data, the classification criteria are not met.

dodecan-1-ol:
Based on available data, the classification criteria are not met.

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

STOT - single exposure

Remarks

decan-1-ol:
The substance or mixture is not classified as specific target organ toxicant, single exposure.

dodecan-1-ol:
The substance or mixture is not classified as specific target organ toxicant, single exposure.

tetradecanol:
The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Remarks

decan-1-ol:
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

dodecan-1-ol:
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

tetradecanol:
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

decan-1-ol:
Rat; Oral; Subchronic toxicity
NOAEL: 2,000 mg/kg (based on body weight and day); OECD Test Guideline 422
(literature value)
The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).
Test substance: dodecan-1-ol

dodecan-1-ol:
Rat; oral feed; 56 days
NOAEL: 2,000 mg/kg (based on body weight and day); OECD Test Guideline 422
(literature value)

tetradecanol:
Rat; oral feed; 90-day
NOAEL: 3,548 mg/kg (based on body weight and day)
(literature value)
The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).

Test substance: Alcohols, C14-15- branched and linear

Aspiration hazard

Aspiration toxicity

decan-1-ol:
Not applicable

dodecan-1-ol:
Not applicable

tetradecanol:
Not applicable

Toxicological information

decan-1-ol:
Toxicokinetics, metabolism and distribution
extensive and rapid metabolisation
(literature value)

dodecan-1-ol:
Toxicokinetics
The substance is poorly absorbed via skin.
The substance is metabolised and excreted.

tetradecanol:
Toxicokinetics
The substance is poorly absorbed via skin.
The substance is metabolised and excreted.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish

decan-1-ol:
LC50 (96 h) Pimephales promelas (fathead minnow): > 1 - 10 mg/l ; flow-through test; OECD Test Guideline 203
(literature value)

dodecan-1-ol:
LC50 (96 h) Pimephales promelas (fathead minnow): > 1 - 10 mg/l ; flow-through test; US EPA 1975
(literature value)

tetradecanol:
LC50 (96 h) Oncorhynchus mykiss (rainbow trout): > 1 mg/l ; semi-static test; OECD Test Guideline 203
(literature value)

Toxicity to fish - Chronic toxicity

decan-1-ol:
EC10 (33 d) Pimephales promelas (fathead minnow): 0.43 mg/l; mortality; flow-through test; OECD Test Guideline 210

dodecan-1-ol:
study scientifically unjustified

tetradecanol:
study scientifically unjustified

Toxicity to daphnia and other aquatic invertebrates

decan-1-ol:
LC50 (96 h) Nitocra spinipes: > 1 - 10 mg/l ; static test; OECD Test Guideline 202
(literature value)

dodecan-1-ol:
EC50 (48 h) Daphnia magna (Water flea): > 0.1 - 1 mg/l ; static test; OECD Test Guideline 202

	tetradecanol: EC50 (48 h) Daphnia magna (Water flea): > 1 - 10 mg/l ; semi-static test; OECD Test Guideline 202 In the range of water solubility not toxic under test conditions. (literature value)
Toxicity to daphnia and other aquatic invertebrates - Chronic toxicity	decan-1-ol: EC10 (21 d) Daphnia magna (Water flea): 0.21 mg/l; reproduction rate; semi-static test; OECD Test Guideline 211 (literature value) decan-1-ol: NOEC (21 d) Daphnia magna (Water flea): 0.11 mg/l; reproduction rate; semi-static test; OECD Test Guideline 211 (literature value) dodecan-1-ol: NOEC (21 d) Daphnia magna (Water flea): > 0.01 - 0.1 mg/l; reproduction rate; semi-static test; OECD Test Guideline 211 tetradecanol: NOEC (21 d) Daphnia magna (Water flea): > 0.001 - 0.01 mg/l; reproduction rate; semi-static test; OECD Test Guideline 211 (literature value)
Toxicity to aquatic plants	decan-1-ol: EC50 (72 h) algae: > 1 - 10 mg/l ; calculated; (literature value) Category approach dodecan-1-ol: ErC50 (72 h) Desmodesmus subspicatus (green algae): > 0.1 - 1 mg/l ; static test; OECD Test Guideline 201 dodecan-1-ol: NOEC (72 h) Desmodesmus subspicatus (green algae): 0.085 mg/l ; cell number; static test; OECD Test Guideline 201 tetradecanol: EC50 (96 h) Desmodesmus subspicatus (green algae) ; static test; In the range of water solubility not toxic under test conditions. (literature value)
Toxicity to bacteria	decan-1-ol: The study is not necessary. Justification: Readily biodegradable. The substance is not to be considered to be inhibitory to bacteria. dodecan-1-ol: EC0 (30 min) Pseudomonas putida: > 10,000 mg/l; Respiration inhibition; DIN 38412 (literature value) Category approach tetradecanol: EC0 (30 min) Pseudomonas putida: > 10,000 mg/l; Respiration inhibition; DIN 38412 (literature value) Category approach
Toxicity to soil dwelling organisms	decan-1-ol: EC50 (72 h) Caenorhabditis elegans, Worm (Nematoda): 98 mg/kg; mortality (literature value) dodecan-1-ol: No data available tetradecanol: LC50 (72 h) Caenorhabditis elegans, Worm (Nematoda): > 1,000 mg/kg; mortality (literature value) tetradecanol: EC50 (7 d) Folsomia candida, Arthropod (Collembola): 530 mg/kg; Immobilization

(literature value)

Toxicity to terrestrial flora

decan-1-ol:
Obtaining data is technically impossible.

Toxicity for other terrestrial non-mammalian fauna

decan-1-ol:
The study is not necessary.
Studies on birds do not need to be conducted due to large mammalian dataset.

12.2 Persistence and degradability

Biodegradability

decan-1-ol:
Readily biodegradable.; > 60 %; 28 d; aerobic; OECD Test Guideline 301B
(literature value)

decan-1-ol:
Biodegradable; > 60 %; 56 d; anaerobic
Category approach
(literature value)

dodecan-1-ol:
Readily biodegradable.; > 60 %; 28 d; aerobic; OECD Test Guideline 301D
(literature value)

dodecan-1-ol:
Biodegradable; > 60 %; 56 d; anaerobic
Category approach
(literature value)

tetradecanol:
Readily biodegradable.; > 60 %; 28 d; aerobic; OECD Test Guideline 301B
(literature value)

tetradecanol:
Biodegradable; > 60 %; 56 d; anaerobic
Category approach
(literature value)

12.3 Bioaccumulative potential

Bioaccumulation

decan-1-ol:
Bioconcentration factor (BCF): 20; calculated
Bioaccumulation is unlikely.

dodecan-1-ol:
Bioaccumulation is unlikely.

tetradecanol:
Bioaccumulation is unlikely.

12.4 Mobility in soil

Mobility

decan-1-ol:
Adsorption/Soil/Sewage sludge; Medium: water - soil; Koc: 1010 - 1433; OECD Test Guideline 106
Slightly mobile in soils

dodecan-1-ol:
Adsorption/Soil; Koc: 17980; log Koc: 4.25; calculated
immobile
strong adsorption to soil
The substance and its relevant degradation products decompose rapidly.

tetradecanol:
Adsorption/Soil; Koc: 50828; log Koc: 4.71; calculated
immobile
strong adsorption to soil
The substance and its relevant degradation products decompose rapidly.

12.5 Results of PBT and vPvB assessment

Results of PBT assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Results of PBT assessment	decan-1-ol: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB). dodecan-1-ol: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB). tetradecanol: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

General advice	decan-1-ol: Harmful to aquatic life with long lasting effects. dodecan-1-ol: Very toxic to aquatic life. Toxic to aquatic life with long lasting effects. tetradecanol: Very toxic to aquatic life with long lasting effects.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product	Can be incinerated, when in compliance with local regulations.
Contaminated packaging	Empty remaining contents.
waste code of the European Union: EWC	The waste code must be determined in agreement with the regional waste disposal authority or company. A waste code in accordance with the European Waste Catalogue (EWC) may not be assigned to this product since it admits of a classification only when the consumer uses it for some purpose.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR	3082
RID	3082
ADN	3082
IMDG	3082
ICAO/IATA	3082

14.2 Proper shipping name

ADR	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1-Dodecanol)
RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1-Dodecanol)

ADN	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1-Dodecanol)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1-Dodecanol)
ICAO/IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1-Dodecanol)

14.3 Transport hazard class

ADR	9
RID	9
ADN	9
IMDG	9
ICAO/IATA	9

14.4 Packing group

ADR	III
RID	III
ADN	III
IMDG	III
ICAO/IATA	III

14.5 Environmental hazards

ADR	Environmentally hazardous	yes
RID	Environmentally hazardous	yes
ADN	Environmentally hazardous	yes
IMDG	Marine pollutant	yes
ICAO/IATA	Environmentally hazardous	yes

14.6 Special precautions for user

ADR	Hazard Identification Number	90
	Labels	9
	Tunnel restriction code	(-)
IMDG	Labels 9	
	EmS Number 1 F-A	
	EmS Number 2 S-F	
ICAO/IATA	Labels	9

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Ship type	2
Pollution category	Y
Remarks	MARPOL NAME: Decyl/Dodecyl/Tetradecyl alcohol mixture

SECTION 15: REGULATORY INFORMATION

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

Occupational restrictions Employment restrictions for children and young workers in accordance with Directive 94/33/EC and the respective national provisions are to be observed.

NATIONAL/OTHER REGULATIONS

Legislation on the control of major-accident hazards involving dangerous substances	Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. list entry in the directive:: ENVIRONMENTAL HAZARDS; E1 Qualifiying quantity 1: 100 t; Qualifiying quantity 2: 200 t;

NOTIFICATION STATUS

Switzerland. Consolidated Inventory (based on EU-EINECS and EU-NLP)	CH INV	listed (product or constituents are listed)
Canadian Domestic Substances List (DSL)	DSL	listed (product or constituents are listed)
Australia Inventory of Chemical Substances (AICS)	AICS	listed (product or constituents are listed)
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	listed (product or constituents are listed)
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	listed (product or constituents are listed)
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	listed (product or constituents are listed)
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	listed (product or constituents are listed)
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC	listed (product or constituents are listed)
Taiwan Chemical Substance Inventory (TCSI)	TCSI	listed (product or constituents are listed)
United States TSCA Inventory	TSCA	listed (product or constituents are listed)

Please note: the names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in chapter 3.

15.2 Chemical safety assessment

dodecan-1-ol

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

tetradecanol

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

decan-1-ol

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

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H319	Causes serious eye irritation.

H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Safety datasheet sections which have been updated:

2. Hazards identification
3. Composition/information on ingredients
7. Handling and storage
8. Exposure controls/personal protection
9. Physical and chemical properties
11. Toxicological information
12. Ecological information
14. Transport information
15. Regulatory information

Further information:

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.
This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

Key or legend to abbreviations and acronyms used in the safety data sheet

ADN	Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
AICS	Australian Inventory of Chemical Substances
ANSI	American National Standards Institute
ASTM	American Society of Testing and Materials (US)
BCF	Bioconcentration factor
CLP	Regulation on Classification, Labelling and Packaging of Substances and Mixtures
DIN	Deutsches Institut für Normung
DNEL	Derived No-Effect Level
DSL	Domestic Substances List
EC…	Effect concentration ... %
ENCS	Existing Notified Chemical Substances (Japan)
EWC	European Waste Catalogue
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISHL	Industrial Safety and Health Law (Japan)
ISO	International Organization for Standardization
IUAPC	International Union of Pure and Applied Chemistry
KECI	Korea Existing Chemicals Inventory
LC…	Lethal Concentration, ...%
LD…	Lethal Dose, ...%
MARPOL	International Convention for the Prevention of Pollution From Ships
NDSL	Non-Domestic Substances List
NOAEL	no observable adverse effect level
NOEL/NOEC	No Observed-effect level/concentration
NZIoC	New Zealand Inventory of Chemicals
OECD	Organisation for Economic Co-operation and Development
PBT	persistent, bioaccumulative, toxic
PICCS	Philippine Inventory of Chemicals and Chemical Substances
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport international ferroviaire de marchandises dangereuses
TG	Test Guideline
TRGS	Technische Regeln für Gefahrstoffe
TSCA	Toxic Substances Control Act

vPvB	very persistent, very bioaccumulative
WGK	Wassergefährdungsklasse

Annex

Attachments to the safety data sheet and/or lists of the identified uses for the listed substances can be downloaded using the internet links below.

dodecan-1-ol

http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/000000000100_EN_01.pdf

tetradecanol

http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/000000000101_EN_01.pdf

decan-1-ol

http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/CON000000023_EN_01.pdf