

NONYLPHENOL

Version: 9.05

Revision Date 03.11.2017

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifier**

Trade name	Nonylphenol
REACH No.	01-2119510715-45-0002
Substance name (REACH / CLP)	Phenol, 4-nonyl-, branched

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

Use	Industrial use raw material for synthesis processes in the chemical industry raw material for surfactant production
Uses advised against	

1.3 Details of the supplier of the safety data sheet

Company	SASOL Germany GmbH Anckelmannsplatz 1 20537 Hamburg
	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) 23 65 - 49 22 32
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SECTION 2: HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Reproductive toxicity Category 2	Suspected of damaging fertility or the unborn child.
Acute toxicity Category 4 (Oral)	Harmful if swallowed.
Skin corrosion Category 1B	Causes severe skin burns and eye damage.
Acute aquatic toxicity Category 1	Very toxic to aquatic life.
Chronic aquatic toxicity Category 1	Very toxic to aquatic life with long lasting effects.

2.2 Label elements**Labelling (REGULATION (EC) No 1272/2008)**

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Hazard pictograms



Signal word

Danger

Hazard statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H361	Suspected of damaging fertility or the unborn child.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.

2.3 Other hazards

None known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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

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

4-nonylphenol, branched

content: ≥ 90 - ≤ 100 %

component type: Active ingredient

EC-No.: 284-325-5

Index-No.: 601-053-00-8

CAS-No.: 84852-15-3

REACH No.: 01-2119510715-45-0002

Classification (Regulation (EC) No 1272/2008):

Repr.	2	H361
Acute Tox.	4 (Oral)	H302
Skin Corr.	1B	H314
Aquatic Acute	1	H400
Aquatic Chronic	1	H410

For information on ingredients listed on the candidate list (Candidate List of Substances of Very High Concern for Authorisation) or in the list of substances subject to authorization (Annex XIV of Regulation (EC) No 1907/2006), see section 15.1. of this data sheet.

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

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Other data

Synonyme: Nonylphenol; Cas-Nr.: 25154-52-3

SECTION 4: FIRST AID MEASURES**4.1 Description of first aid measures**

General advice	Take off all contaminated clothing immediately. If you feel unwell, seek medical advice (show the label where possible).
If inhaled	Move to fresh air. Call a physician immediately.
In case of skin contact	Wash off immediately with plenty of water. Consult a physician.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Protect unharmed eye.
If swallowed	Do NOT induce vomiting. Rinse mouth. If swallowed, seek medical advice immediately and show this container or label.

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: Risk of product entering the lungs on vomiting after ingestion.
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4.3 Indication of any immediate medical attention and special treatment needed

Indication of any immediate medical attention and special treatment needed	Treatment: Call a physician immediately.
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SECTION 5: FIREFIGHTING MEASURES**5.1 Extinguishing media**

Suitable extinguishing media	Water spray, Dry powder, Foam, Carbon dioxide (CO ₂)
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5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	Dangerous gases or fumes may occur in case of fire.
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5.3 Advice for firefighters

Further information	Standard procedure for chemical fires.
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SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions	Use personal protective equipment.
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6.2 Environmental precautions

Environmental precautions	Should not be released into the environment.
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6.3 Methods and materials for containment and cleaning up

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Methods for cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

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

Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities**Requirements for storage areas and containers**

Keep container tightly closed. Keep in a cool, well-ventilated place.

Storage class (TRGS 510)

8AL: Combustible liquids, corrosive

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: 4-nonylphenol, branched			
End Use	Exposure routes	Value	Note
Workers	dermal, Acute/short-term exposure - systemic effects	15 mg/kg	based on body weight and day
	Inhalation, Acute/short-term exposure - systemic effects	1 mg/m3	
	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	7,5 mg/kg	based on body weight and day

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	Inhalation, long-term exposure - systemic effects	0,5 mg/m3	
	dermal, long-term exposure - local effects		Not relevant / not applicable
	Inhalation, long-term exposure - local effects		Not relevant / not applicable
Consumers	dermal, Acute/short-term exposure - systemic effects	7,6 mg/kg	based on body weight and day
	Inhalation, Acute/short-term exposure - systemic effects	0,8 mg/m3	
	Oral, Acute/short-term exposure - systemic effects	0,4 mg/kg	based on body weight and day
	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	3,8 mg/kg	based on body weight and day
	Inhalation, long-term exposure - systemic effects	0,4 mg/m3	
	Oral, long-term exposure - systemic effects	0,08 mg/kg	based on body weight and day
	dermal, long-term exposure - local effects		Not relevant / not applicable
	Inhalation, long-term exposure - local effects		Not relevant / not applicable

PREDICTED NO EFFECT CONCENTRATION (PNEC)

Substance name: 4-nonylphenol, branched		
Environmental Compartment	Value	Note
Fresh water	0,000614 mg/l	
Marine water	0,000527 mg/l	
intermittent release	0,00017 mg/l	
treatment plant	9,5 mg/l	
Fresh water sediment	4,62 mg/kg	based on dry weight
Marine sediment	1,23 mg/kg	based on dry weight
Soil	2,3 mg/kg	based on dry weight
food	2,36 mg/kg	

8.2 Exposure controls

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

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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	Protective suit, Safety shoes
Hygiene measures	Take off all contaminated clothing immediately. Handle in accordance with good industrial hygiene and safety practice.
Protective measures	Wear suitable gloves and eye/face protection. Avoid contact with the skin and the eyes.

ENVIRONMENTAL EXPOSURE CONTROLS

General advice	Should not be released into the environment.
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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	colorless to yellow
Odour	slight, phenol-like
Odour Threshold	No valid method available
pH	Not applicable
Setting point	ca. -8 °C
Boiling point/boiling range	290 - 302 °C; 1.013 hPa
Flash point	ca. 155 °C; DIN 51758
Evaporation rate	No data available

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Flammability (solid, gas)	not applicable (liquid)
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapour pressure	< 0,01 hPa; 20 °C
Relative vapour density	> 1
Density	0,95 g/cm ³ ; 20 °C
Water solubility	0,003 g/l; 20 °C
Partition coefficient: n-octanol/water	log Pow: 3,28
Ignition temperature	ca. 370 °C; DIN 51794
Viscosity, dynamic	ca. 2.500 mPas; 20 °C
Explosive properties	not expected based on structure and functional groups
Oxidizing properties	not expected based on structure and functional groups

9.2 Other data

Additional advice	no explosion limits under standard conditions
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SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Note	Stable under recommended storage conditions.
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10.2 Chemical stability

Note	No decomposition if stored normally.
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10.3 Possibility of hazardous reactions

Hazardous reactions	No dangerous reaction known under conditions of normal use.
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10.4 Conditions to avoid

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

Materials to avoid	None known.;
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10.6 Hazardous decomposition products

Hazardous decomposition products	Stable under normal conditions.
Thermal decomposition	No decomposition if used as directed.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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Acute toxicity

Acute oral toxicity 4-nonylphenol, branched:
LD50 Rat: > 300 - 2.000 mg/kg
(literature value)
Harmful if swallowed.

Acute inhalation toxicity 4-nonylphenol, branched:
The study is not necessary.
Justification:
Corrosive

Acute dermal toxicity 4-nonylphenol, branched:
The study is not necessary.
Justification:
Corrosive

Skin corrosion/irritation

Skin irritation 4-nonylphenol, branched:
Rabbit: Corrosive; OECD Test Guideline 404
Causes severe skin burns and eye damage.

Serious eye damage/eye irritation

Eye irritation 4-nonylphenol, branched:
Rabbit: Corrosive; OECD Test Guideline 405
Causes serious eye damage.

Respiratory or skin sensitisation

Sensitisation 4-nonylphenol, branched:
Maximisation Test Guinea pig: not sensitizing; OECD Test Guideline 406
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity in vitro 4-nonylphenol, branched:
In vitro tests did not show mutagenic effects

Genotoxicity in vivo 4-nonylphenol, branched:
Micronucleus test; Mouse: not mutagenic; OECD Test Guideline 474

Remarks 4-nonylphenol, branched:
Based on available data, the classification criteria are not met.

Carcinogenicity

Carcinogenicity 4-nonylphenol, branched:
This information is not available.

Reproductive toxicity

Reproductive toxicity 4-nonylphenol, branched:
Rat; Oral
NOAEL ((parents)): 150 mg/kg (based on body weight and day)
NOAEL (F1): 150 mg/kg (based on body weight and day)
NOAEL (F2): 150 mg/kg (based on body weight and day)
(literature value)

RemarksReproductive toxicity 4-nonylphenol, branched:
Suspected of damaging fertility or the unborn child.

Teratogenicity 4-nonylphenol, branched:
Rat; Oral
NOAEL: 300 mg/kg (based on body weight and day)
NOAEL (pregnant female): 75 mg/kg (based on body weight and day); OECD Test Guideline 414
(literature value)

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STOT - single exposure

Remarks

4-nonylphenol, branched:
The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Remarks

4-nonylphenol, branched:
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

4-nonylphenol, branched:
Rat; Oral; Subchronic toxicity
NOAEL: 15 mg/kg (based on body weight and day)
Target Organs: Kidney
(literature value)

Aspiration hazard

Aspiration toxicity

4-nonylphenol, branched:
Not applicable

Toxicological information

4-nonylphenol, branched:
Toxicokinetics
The substance is poorly absorbed via skin.
The substance is predicted to be bioavailable via the oral route.
The substance is metabolised and excreted.
low bioaccumulation potential
(literature value)

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish

4-nonylphenol, branched:
LC50 (96 h) Pimephales promelas (fathead minnow): > 0,1 - 1 mg/l ; flow-through test
(literature value)

Toxicity to fish - Chronic toxicity

4-nonylphenol, branched:
NOEC (91 d) Oncorhynchus mykiss (rainbow trout): 0,006 mg/l; reproduction rate
(literature value)

Toxicity to daphnia and other aquatic invertebrates

4-nonylphenol, branched:
EC50 (48 h) Daphnia magna (Water flea): > 0,01 - 0,1 mg/l ; semi-static test
(literature value)

Toxicity to daphnia and other aquatic invertebrates - Chronic toxicity

4-nonylphenol, branched:
NOEC (21 d) Daphnia magna (Water flea): 0,024 mg/l; reproduction rate; semi-static test; OECD Test Guideline 202, part 2

Toxicity to aquatic plants

4-nonylphenol, branched:
EC50 (72 h) Pseudokirchneriella subcapitata (microalgae): > 0,1 - 1 mg/l ; Growth inhibition; (literature value)

4-nonylphenol, branched:
NOEC (96 h) Lemna minor (duckweed): > 0,1 - 1 mg/l ; (literature value)

Toxicity to bacteria

4-nonylphenol, branched:
NOEC (40 d) : 100mg/kg Soil (dry mass); Soil

Toxicity to soil dwelling

4-nonylphenol, branched:
LC50 (14 d) other soil dwelling worm: 88,6 mg/kg; mortality

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organisms	(literature value) 4-nonylphenol, branched: EC10 (28 d) other soil dwelling worm: 24 mg/kg (literature value)
Toxicity to terrestrial flora	4-nonylphenol, branched: growth; EC50 (7 d): 559 mg/kg; Lactuca sativa (lettuce); OECD Test Guideline 208 (literature value) 4-nonylphenol, branched: growth; EC10 (15 d): 574,8 mg/kg; Brassica rapa; OECD Test Guideline 208 (literature value)
Toxicity for other terrestrial non-mammalian fauna	4-nonylphenol, branched: Reproduction Test; NOEC: 70,8 mg/kg food; 49 d; other birds; OECD Test Guideline 206 The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy). (literature value) Test substance: Octylphenol
12.2 Persistence and degradability	
Biodegradability	4-nonylphenol, branched: inherently biodegradable; 48,2 %; 35 d; aerobic; OECD Test Guideline 301B (literature value) 4-nonylphenol, branched: not readily biodegradable (10 day window not reached); 57 - 68 %; 28 d; aerobic (literature value)
12.3 Bioaccumulative potential	
Bioaccumulation	4-nonylphenol, branched: Pimephales promelas (fathead minnow); 28 d; Bioconcentration factor (BCF): 740 not bioaccumulative according PBT criteria (literature value)
12.4 Mobility in soil	
Mobility	4-nonylphenol, branched: Adsorption/Soil; Koc: 14390 immobile strong adsorption to soil (literature value)
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	4-nonylphenol, branched: Based on available data, the classification criteria are not met.
12.6 Other adverse effects	
General advice	4-nonylphenol, branched: None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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Product

Dispose of contents/ container to an approved waste disposal plant.

waste code of the European Union: EWC

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. The waste code must be determined in agreement with the regional waste disposal authority or company.

SECTION 14: TRANSPORT INFORMATION**14.1 UN number**

ADR	3145
RID	3145
ADN	3145
IMDG	3145
ICAO/IATA	3145

14.2 Proper shipping name

ADR	ALKYLPHENOLS, LIQUID, N.O.S. (Nonylphenol)
RID	ALKYLPHENOLS, LIQUID, N.O.S. (Nonylphenol)
ADN	ALKYLPHENOLS, LIQUID, N.O.S. (Nonylphenol)
IMDG	ALKYLPHENOLS, LIQUID, N.O.S. (Nonylphenol)
ICAO/IATA	ALKYLPHENOLS, LIQUID, N.O.S. (Nonylphenol)

14.3 Transport hazard class

ADR	8
RID	8
ADN	8
IMDG	8
ICAO/IATA	8

14.4 Packing group

ADR	II
RID	II
ADN	II
IMDG	II
ICAO/IATA	II

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	80
	Labels	8
	Tunnel restriction code	(E)

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IMDG	Labels	8
	EmS Number 1	F-A
	EmS Number 2	S-B
ICAO/IATA	Labels	8

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

Ship type	1
Pollution category	X
Remarks	MARPOL NAME: Nonylphenol

SECTION 15: REGULATORY INFORMATION

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

EU REGULATIONS /INTERNATIONAL REGULATIONS

EU SVHC: REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).

Listed

The product contains following substances that are listed on the named regulation/list:

Substance name	CAS-No. EC-No.	content
4-nonylphenol, branched	84852-15-3 284-325-5	<= 100 %

EU 689/2008: Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals

Listed

The product contains following substances that are listed on the named regulation/list:

Substance name	CAS-No. EC-No.	content
4-nonylphenol, branched	84852-15-3 284-325-5	<= 100 %

EU RA17: Regulation (EC) No 1907/2006; ANNEX XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES

Listed

46. a) Nonylphenol C₆ H₄ (OH)C₉ H₁₉; CAS 25154-52-3; EC 246-672-0

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.

Employment restrictions for pregnant workers, workers who have recently given birth and nursing mothers in accordance with Directive 92/85/EEC 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

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Other regulations

Qualifying quantity 1: 100 t; Qualifying quantity 2: 200 t;

Directive 2003/53/EC relating to restrictions on the marketing and use of certain dangerous substances and preparations (nonylphenol, nonylphenol ethoxylate and cement)

NOTIFICATION STATUS

Switzerland. Consolidated Inventory	CH INV	listed (product or constituents are listed)
US. Toxic Substances Control Act	TSCA	listed (product or constituents are listed)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)	DSL	listed (product or constituents are listed)
Australia. Industrial Chemical (Notification and Assessment) Act	AICS	listed (product or constituents are listed)
Japan. Kashin-Hou Law List	ENCS (JP)	listed (product or constituents are listed)
Japan. Industrial Safety & Health Law (ISHL) List	ISHL (JP)	listed (product or constituents are listed)
Korea. Existing Chemicals Inventory (KECI)	KECI (KR)	listed (product or constituents are listed)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	PICCS (PH)	listed (product or constituents are listed)
China. Inventory of Existing Chemical Substances	INV (CN)	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**4-NONYLPHENOL, BRANCHED**

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.**

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H361	Suspected of damaging fertility or the unborn child.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Safety datasheet sections which have been updated:

3. Composition/information on ingredients

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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
IUPAC	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.

http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/000000000397_EN_01.pdf



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