Safety Data Sheet

According to Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

TERGITOL™ NP-4 Surfactant

Version 1.0 Release Date: 2018/03/08

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : TERGITOL™ NP-4 Surfactant

Recommended use of the chemical and restrictions on use

Recommended use : Cleaners & degreasers, dry cleaning, dispersant for petroleum oil

Restrictions on use : No restriction of use

Manufacturer or supplier's details

Headquarters

Company : PETRONAS Chemicals Group Berhad

Address : Tower 2, PETRONAS Twin Towers,
Kuala Lumpur City Centre,
50088 Kuala Lumpur
Malaysia

Plant Site

Company : PETRONAS Chemicals Derivatives Sdn Bhd

Address : Administration Complex,
Kerteh Industrial Area,
KM 106 Jalan Kuala Terengganu - Kuantan,
24300 Kerteh, Kemaman,
Terengganu, Malaysia

Emergency telephone number : (+609) 830 7555
+6221 2940 6682 Ext 110

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

Serious eye damage/eye irritation : Category 2A

Acute aquatic toxicity : Category 1

Chronic aquatic toxicity : Category 1

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear eye protection/ face protection.

Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P391 Collect spillage.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification
No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance
Chemical nature : Surfactant

Hazardous components

Chemical name	CAS-No.	Concentration (%)
Nonylphenol Polyethylene Glycol Ether	127087-87-0	>= 90 -<= 100

4. FIRST AID MEASURES

If inhaled : Move to fresh air.
If symptoms persist, call a physician.
If unconscious, place in recovery position and seek medical advice.

In case of skin contact : Remove contaminated clothing and shoes.
Wash off with soap and water.
If symptoms persist, call a medical doctor.
Wash clothing before reuse.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
Continue rinsing eyes during transport to hospital.
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.
If symptoms persist, call a medical doctor.
If patient is fully conscious, give two glasses of milk or water at once.

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

Consult a medical doctor.

Most important symptoms and effects, both acute and delayed	:	Contact with eye may cause corneal injury.
Notes to physician	:	The decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or oesophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	For small fires, use: Carbon dioxide. Dry chemical fire extinguishers. For large fires, use: Water fog or fine spray. Alcohol resistant foam.
Unsuitable extinguishing media	:	High volume water jet.
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses. Will support combustion.
Hazardous combustion products	:	Burning can produce the following combustion products: Carbon monoxide and/or carbon dioxide. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.
Specific extinguishing methods	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed off in accordance with local regulations.
Special protective equipment for firefighters	:	Wear positive-pressure self-contained breathing apparatus (SBCA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Floor may be slippery. Use care to avoid falling.
Environmental precautions	:	Do not allow contact with soil, surface or ground water. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Contain spills immediately with inert materials (eg. sand, earth). To avoid gelling and foaming problems, do not use water to flush away spills.

Spills should be contained by, and covered with large quantities of sand, earth or any other readily available absorbent material which is then brushed in vigorously to assist absorption. Remove with non-sparking shovel.
Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not get in eyes, on skin, on clothing. Do not swallow. Wash thoroughly after handling. Do not breathe vapours/dust. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	:	Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep container tightly closed in a dry and well-ventilated place. Hold bulk storage under nitrogen blanket. Store in accordance with good industrial practices. Electrical installations / working materials must comply with the technological safety standards.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

Personal protective equipment
Hand protection

Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear gloves made of : PVC (polyvinyl chloride) coated material
Eye protection	:	Use chemical goggles. Eye wash fountain should be located in immediate work area. Tightly fitting safety goggles. Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place. Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, gloves, boots, apron or full body-suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly.

Hygiene measures	:	Wash hands before breaks and at the end of workday. Good general ventilation should be sufficient for most conditions. Surfactants can cause foaming problems in biological wastewater treatment plants and other high shear operations. PROCESS HAZARD: Sudden release of hot organic chemical vapour or mists from process equipment operating at elevated temperature and pressure, or sudden ingressof air into hot equipment under vacuum, may result in ignitions without the presence of obvious ignition sources. Published 'autoignition' or 'ignition' temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. When using do not eat or drink. When using do not smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Colour	:	Colourless
Odour	:	Odourless
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	Not applicable
Boiling point/boiling range	:	Not applicable
Flash point	:	> 100 °C
Evaporation rate	:	No data available
Flammability (liquids)	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	< 0,001 hPa (20 °C)
Relative vapour density	:	1,023
Relative density	:	No data available
Density	:	No data available
Solubility(ies)		
Water solubility	:	< 0,01 g/l
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available

10. STABILITY AND REACTIVITY

Reactivity	:	Hazardous polymerisation does not occur.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous	:	No dangerous reaction known under conditions of normal use.

reactions
Incompatible materials : Normally unreactive. However, avoid strong bases at high temperatures, strong acids, strong oxidizing agents and materials reactive with hydroxyl compounds.
Hazardous decomposition products : Fumes, smoke, carbon monoxide
None under normal conditions of storage and use.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:
Acute oral toxicity : LD50 (Rat): 1.602 mg/kg
Acute inhalation toxicity : Remarks: No data available
Acute dermal toxicity : Remarks: No data available

Skin corrosion/irritation

Components:
Nonylphenol Polyethylene Glycol Ether:
Remarks : No data available

Serious eye damage/eye irritation

Components:
Nonylphenol Polyethylene Glycol Ether:
Species : Rabbit
Result : Irritating to eyes.

Respiratory or skin sensitisation

Components:
Nonylphenol Polyethylene Glycol Ether:
Exposure routes : Inhalation
Remarks : No data available
Exposure routes : Skin contact
Result : Not sensitising

Germ cell mutagenicity

Components:
Nonylphenol Polyethylene Glycol Ether:
Germ cell mutagenicity - Assessment : Not mutagenic in vivo and in vitro

Carcinogenicity

Components:
Nonylphenol Polyethylene Glycol Ether:
Carcinogenicity - Assessment : No data available

Reproductive toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Reproductive toxicity - Assessment : No data available

STOT - single exposure

Components:
Nonylphenol Polyethylene Glycol Ether:
Remarks : No data available

STOT - repeated exposure

Components:
Nonylphenol Polyethylene Glycol Ether:
Remarks : No data available

Aspiration toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:
Statement on Aspiration Tox. : No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 0,218 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,148 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 3 mg/l Exposure time: 72 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0,006 mg/l Exposure time: 91 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0,1 mg/l Exposure time: 21 d
Toxicity to microorganisms	:	Remarks: No data available

Persistence and degradability

Components:
Nonylphenol Polyethylene Glycol Ether:
Biodegradability : Result: Readily biodegradable in water.

Bioaccumulative potential

Components:
Nonylphenol Polyethylene Glycol Ether:

Bioaccumulation	:	Bioconcentration factor (BCF): 0,2 - 16
Partition coefficient: n-octanol/water	:	log Pow: 5,67 (25 °C)

Mobility in soil

Components:
Nonylphenol Polyethylene Glycol Ether:
Mobility : Medium: Soil

Remarks: Log Koc = 2.631 (25 °C)

Other adverse effects

Components:

Nonylphenol Polyethylene Glycol Ether:

Additional ecological information : No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
Hazard warning labels should be removed from the container walls.
Incinerate under controlled conditions in accordance with all local and national laws and regulations.

Contaminated packaging : Empty containers can only be disposed of when the remaining waste products adhering to the container walls have been removed. Hazard warning labels should be removed from the container walls.
Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class : 9
Packing group : III
Labels : 9

IATA-DGR

UN/ID No. : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
Class : 9
Packing group : III
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964

IMDG-Code

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

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

Pollution category	:	Y
Ship type	:	2
Hazchem Code	:	●3Z

15. REGULATORY INFORMATION

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

Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

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

REACH	:	Not in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory.
NZIoC	:	Not in compliance with the inventory
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory.
PICCS	:	On the inventory, or in compliance with the inventory.
IECSC	:	On the inventory, or in compliance with the inventory.
TCSI	:	Not in compliance with the inventory
TSCA	:	On TSCA Inventory.

16. OTHER INFORMATION

Revision Date	:	2018/03/08
Sources of key data used to compile the Safety Data Sheet	:	ECHA - European Chemicals Agency

Full text of other abbreviations

(Q)SAR	-	(Quantitative) Structure Activity Relationship
ACGIH	-	American Conference of Governmental Industrial Hygienists
AICS	-	Australian Inventory of Chemical Substances
ANTT	-	National Agency for Transport by Land of Brazil
ASTM	-	American Society for the Testing of Materials
bw	-	Body weight
CCHC	-	Chemicals Classification and Hazard Communication
CMR	-	Carcinogen, Mutagen or Reproductive Toxicant
CPR	-	Controlled Products Regulations
DIN	-	Standard of the German Institute for Standardisation
DSL	-	Domestic Substances List (Canada)
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
ERG	-	Emergency Response Guide
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
ICOP	-	Industry Code of Practice on Chemicals Classification and Hazard Communication
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
MY PEL	-	Malaysian Permissible Exposure Limit
n.o.s.	-	Not Otherwise Specified
Nch	-	Chilean Norm
NITE	-	National Institute of Technology and Evaluation
NO(A)EC	-	No Observed (Adverse) Effect Concentration
NO(A)EL	-	No Observed (Adverse) Effect Level
NOELR	-	No Observable Effect Loading Rate
NOM	-	Official Mexican Norm
NTP	-	National Toxicology Program
NZIoC	-	New Zealand Inventory of Chemicals
OCSPP	-	Office of Chemical Safety and Pollution Prevention
OECD	-	Organization for Economic Co-operation and Development
PBT	-	Persistent, Bioaccumulative and Toxic
PICCS	-	Philippines Inventory of Chemicals and Chemical Substances
REACH	-	Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
SADT	-	Self-Accelerating Decomposition Temperature
SDS	-	Safety Data Sheet
STEL	-	Short Term Exposure Limit
TCSI	-	Taiwan Chemical Substance Inventory
TDG	-	Transportation of Dangerous Goods
TSCA	-	Toxic Substances Control Act (United States)
TWA	-	Time Weighted Average
UN	-	United Nations
UNRTDG	-	United Nations Recommendations on the Transport of Dangerous Goods
UVCB	-	Unknown or Variable Composition, Complex Reaction Products and Biological Materials
vPvB	-	Very Persistent and Very Bioaccumulative
WHMIS	-	Workplace Hazardous Materials Information System

Disclaimer

To the best of PETRONAS knowledge, the information contained herein is accurate and reliable as of the date of publication. Any use of information provided should be undertaken in consultation with a professional with the appropriate expertise, as necessary in the circumstances. No warranty, express or implied, is given as to the quality, accuracy, reliability, applicability or completeness of the contents of this SDS. The information presented here pertains only to the product as shipped. It is the responsibility of the customer to ensure that any activities relating to the product comply with all federal, state or local laws. Any hazards associated with any product regulatory requirements are subject to change and may differ between various locations. Except to the extent required by law, re-publication or retransmission of this SDS, in whole or in part, is strictly prohibited. PETRONAS does not take responsibility for use, transportation, storage, handling, packaging or disposal of the product that is beyond our knowledge and recommendation by this SDS.

Product Stewardship Advisory:
PETRONAS aims to increase awareness of all the hazards associated with the storage, handling and use of its products. Thoroughly reviewing the accompanying Safety Data Sheets and disseminating the information to all dependent and interested parties is an essential part of any 'Responsible Care' programme.

ID / EN

Safety Data Sheet

According to Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

TERGITOL™ NP-6 Surfactant

Version 1.0 Release Date: 2018/03/08

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : TERGITOL™ NP-6 Surfactant

Recommended use of the chemical and restrictions on use

Recommended use : Cleaners & degreasers, agrochemicals, dry cleaning, adhesives

Restrictions on use : No restriction of use

Manufacturer or supplier's details

Headquarters

Company : PETRONAS Chemicals Group Berhad

Address : Tower 2, PETRONAS Twin Towers,
Kuala Lumpur City Centre,
50088 Kuala Lumpur
Malaysia

Plant Site

Company : PETRONAS Chemicals Derivatives Sdn Bhd

Address : Administration Complex,
Kerteh Industrial Area,
KM 106 Jalan Kuala Terengganu - Kuantan,
24300 Kerteh, Kemaman,
Terengganu, Malaysia

Emergency telephone number : (+609) 830 7555
+6221 2940 6682 Ext 110

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

Serious eye damage/eye irritation : Category 2A

Acute aquatic toxicity : Category 1

Chronic aquatic toxicity : Category 1

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear eye protection/ face protection.

Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P391 Collect spillage.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification
No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance
Chemical nature : Surfactant

Hazardous components

Chemical name	CAS-No.	Concentration (%)
Nonylphenol Polyethylene Glycol Ether	127087-87-0	>= 90 -<= 100

4. FIRST AID MEASURES

If inhaled : Move to fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
Wash contaminated clothing before re-use.
Wash off with soap and water.

In case of eye contact : In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
Continue rinsing eyes during transport to hospital.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do NOT induce vomiting.
Do NOT give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.
If symptoms persist, call a medical doctor.

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

Consult a medical doctor.

Most important symptoms and effects, both acute and delayed	:	Contact with eye may cause corneal injury.
Notes to physician	:	The decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or oesophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	For small fires, use: Carbon dioxide. Dry chemical fire extinguishers. For large fires, use: Water fog or fine spray. Alcohol resistant foam.
Unsuitable extinguishing media	:	High volume water jet.
Specific hazards during firefighting	:	Will support combustion. Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Burning can produce the following combustion products: Carbon monoxide and/or carbon dioxide. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.
Specific extinguishing methods	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed off in accordance with local regulations.
Special protective equipment for firefighters	:	Wear positive-pressure self-contained breathing apparatus (SBCA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Wear suitable protective equipment. Floor may be slippery. Use care to avoid falling.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Contain liquid to prevent contamination of soil, surface water or ground water. Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for	:	Keep in suitable, closed containers for disposal.

containment and cleaning up	Spills should be contained by, and covered with large quantities of sand, earth or any other readily available absorbent material which is then brushed in vigorously to assist absorption. Remove with non-sparking shovel. Contain spills immediately with inert materials (eg. sand, earth). To avoid gelling and foaming problems, do not use water to flush away spills.

7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not get in eyes, on skin, on clothing. Do not swallow. Do not breathe vapours/dust. Wash thoroughly after handling. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	:	Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards. Hold bulk storage under nitrogen blanket. Store in accordance with good industrial practices.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

Personal protective equipment
Hand protection

Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear gloves made of : PVC (polyvinyl chloride) coated material
Eye protection	:	Use chemical goggles. Eye wash fountain should be located in immediate work area. Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place. Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, gloves, boots, apron or full body-suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or

dispose of properly.

Hygiene measures	:	Wash hands before breaks and at the end of workday. Good general ventilation should be sufficient for most conditions. Surfactants can cause foaming problems in biological wastewater treatment plants and other high shear operations. PROCESS HAZARD: Sudden release of hot organic chemical vapour or mists from process equipment operating at elevated temperature and pressure, or sudden ingressof air into hot equipment under vacuum, may result in ignitions without the presence of obvious ignition sources. Published 'autoignition' or 'ignition' temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. When using do not eat or drink. When using do not smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Colour	:	Colourless
Odour	:	Mild
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	Not applicable
Boiling point/boiling range	:	Not applicable
Flash point	:	218 °C Method: ASTM D 93, Pensky-Martens closed cup
Evaporation rate	:	< 0,01
Flammability (liquids)	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	< 1 hPa (20 °C)
Relative vapour density	:	1,023
Relative density	:	No data available
Density	:	No data available
Solubility(ies)		
Water solubility	:	< 0,01 g/l
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available

10. STABILITY AND REACTIVITY

Reactivity	:	Hazardous polymerisation does not occur.
Chemical stability	:	Stable under normal conditions.

Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Incompatible materials	:	Normally unreactive. However, avoid strong bases at high temperatures, strong acids, strong oxidizing agents and materials reactive with hydroxyl compounds.
Hazardous decomposition products	:	None under normal conditions of storage and use.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Acute oral toxicity	:	LD50 (Rat): 1.602 mg/kg
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	Remarks: No data available

Skin corrosion/irritation

Components:
Nonylphenol Polyethylene Glycol Ether:

Remarks	:	No data available

Serious eye damage/eye irritation

Components:
Nonylphenol Polyethylene Glycol Ether:

Species	:	Rabbit
Result	:	Irritating to eyes.

Respiratory or skin sensitisation

Components:
Nonylphenol Polyethylene Glycol Ether:

Exposure routes	:	Inhalation
Remarks	:	No data available
Exposure routes	:	Skin contact
Result	:	Not sensitising

Germ cell mutagenicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Germ cell mutagenicity - Assessment	:	Not mutagenic in vivo and in vitro

Carcinogenicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Carcinogenicity - Assessment	:	No data available

Reproductive toxicity

Components:

Nonylphenol Polyethylene Glycol Ether:
Reproductive toxicity - Assessment : No data available

STOT - single exposure

Components:
Nonylphenol Polyethylene Glycol Ether:
Remarks : No data available

STOT - repeated exposure

Components:
Nonylphenol Polyethylene Glycol Ether:
Remarks : No data available

Aspiration toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:
Statement on Aspiration Tox. : No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 0,218 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,148 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 3 mg/l Exposure time: 72 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0,006 mg/l Exposure time: 91 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0,1 mg/l Exposure time: 21 d
Toxicity to microorganisms	:	Remarks: No data available

Persistence and degradability

Components:
Nonylphenol Polyethylene Glycol Ether:
Biodegradability : Result: Readily biodegradable in water.

Bioaccumulative potential

Components:
Nonylphenol Polyethylene Glycol Ether:
Bioaccumulation : Bioconcentration factor (BCF): 0,2 - 16
Partition coefficient: n-octanol/water : log Pow: 5,67 (25 °C)

Mobility in soil

Components:
Nonylphenol Polyethylene Glycol Ether:

Mobility : Medium: Soil
Remarks: Log Koc = 2.631 (25 °C)

Other adverse effects

Components:
Nonylphenol Polyethylene Glycol Ether:
Additional ecological information : No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
Incinerate under controlled conditions in accordance with all local and national laws and regulations.

Contaminated packaging : Empty containers can only be disposed of when the remaining waste products adhering to the container walls have been removed. Hazard warning labels should be removed from the container walls.
Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG
UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class : 9
Packing group : III
Labels : 9

IATA-DGR
UN/ID No. : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
Class : 9
Packing group : III
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964

IMDG-Code
UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class : 9

Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

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

Pollution category	:	Y
Ship type	:	2
Hazchem Code	:	●3Z

15. REGULATORY INFORMATION

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

Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

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

REACH	:	Not in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory.
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KECI	:	On the inventory, or in compliance with the inventory.
PICCS	:	On the inventory, or in compliance with the inventory.
IECSC	:	On the inventory, or in compliance with the inventory.
TCSI	:	Not in compliance with the inventory
TSCA	:	On TSCA Inventory.

16. OTHER INFORMATION

Revision Date	:	2018/03/08
Sources of key data used to compile the Safety Data Sheet	:	ECHA - European Chemicals Agency

Full text of other abbreviations

(Q)SAR	-	(Quantitative) Structure Activity Relationship
ACGIH	-	American Conference of Governmental Industrial Hygienists
AICS	-	Australian Inventory of Chemical Substances
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bw	-	Body weight
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CMR	-	Carcinogen, Mutagen or Reproductive Toxicant
CPR	-	Controlled Products Regulations
DIN	-	Standard of the German Institute for Standardisation
DSL	-	Domestic Substances List (Canada)
ECx	-	Concentration associated with x% response
ELx	-	Loading rate associated with x% response
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ENCS	-	Existing and New Chemical Substances (Japan)
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ERG	-	Emergency Response Guide
GHS	-	Globally Harmonized System
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UNRTDG	-	United Nations Recommendations on the Transport of Dangerous Goods
UVCB	-	Unknown or Variable Composition, Complex Reaction Products and Biological Materials
vPvB	-	Very Persistent and Very Bioaccumulative
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Disclaimer

To the best of PETRONAS knowledge, the information contained herein is accurate and reliable as of the date of publication. Any use of information provided should be undertaken in consultation with a professional with the appropriate expertise, as necessary in the circumstances. No warranty, express or implied, is given as to the quality, accuracy, reliability, applicability or completeness of the contents of this SDS. The information presented here pertains only to the product as shipped. It is the responsibility of the customer to ensure that any activities relating to the product comply with all federal, state or local laws. Any hazards associated with any product regulatory requirements are subject to change and may differ between various locations. Except to the extent required by law, re-publication or retransmission of this SDS, in whole or in part, is strictly prohibited. PETRONAS does not take responsibility for use, transportation, storage, handling, packaging or disposal of the product that is beyond our knowledge and recommendation by this SDS.

Product Stewardship Advisory:
PETRONAS aims to increase awareness of all the hazards associated with the storage, handling and use of its products. Thoroughly reviewing the accompanying Safety Data Sheets and disseminating the information to all dependent and interested parties is an essential part of any 'Responsible Care' programme.

ID / EN

Safety Data Sheet

According to Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

PETRONAS

TERGITOL™ NP-8 Surfactant

Version 1.0 Release Date: 2018/03/08

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : TERGITOL™ NP-8 Surfactant

Recommended use of the chemical and restrictions on use

Recommended use : Cleaners and detergents, paper & textile processing, paints & coatings, agrochemicals and metalworking fluid, dust control, degreasers, prewash spotters

Restrictions on use : No restriction of use

Manufacturer or supplier's details

Headquarters

Company : PETRONAS Chemicals Group Berhad

Address : Tower 2, PETRONAS Twin Towers,
Kuala Lumpur City Centre,
50088 Kuala Lumpur
Malaysia

Plant Site

Company : PETRONAS Chemicals Derivatives Sdn Bhd

Address : Administration Complex,
Kerteh Industrial Area,
KM 106 Jalan Kuala Terengganu - Kuantan,
24300 Kerteh, Kemaman,
Terengganu, Malaysia

Emergency telephone number : (+609) 830 7555
+6221 2940 6682 Ext 110

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

Serious eye damage/eye irritation : Category 2A

Acute aquatic toxicity : Category 1

Chronic aquatic toxicity : Category 1

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.

P280 Wear eye protection/ face protection.
Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P391 Collect spillage.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification
No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance
Chemical nature : Surfactant

Hazardous components

Chemical name	CAS-No.	Concentration (%)
Nonylphenol Polyethylene Glycol Ether	127087-87-0	>= 90 -<= 100

4. FIRST AID MEASURES

If inhaled : Move to fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a medical doctor.

In case of skin contact : Remove contaminated clothing and shoes.
Wash off with plenty of water.
Call a physician if irritation persists.

In case of eye contact : In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Seek medical advice.
Protect unharmed eye.
Keep eye wide open while rinsing.
Continue rinsing eyes during transport to hospital.
If eye irritation persists, consult a specialist.
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Keep respiratory tract clear.
Do NOT induce vomiting.
Do NOT give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.
If symptoms persist, call a medical doctor.

General advice : Move out of dangerous area.

		Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended. Consult a medical doctor.
Most important symptoms and effects, both acute and delayed	:	Contact with eye may cause corneal injury.
Notes to physician	:	The decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or oesophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	For small fires, use: Carbon dioxide. Dry chemical fire extinguishers. For large fires, use: Water fog or fine spray. Alcohol resistant foam.
Unsuitable extinguishing media	:	High volume water jet.
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Burning can produce the following combustion products: Carbon monoxide and/or carbon dioxide. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.
Specific extinguishing methods	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed off in accordance with local regulations.
Special protective equipment for firefighters	:	Wear positive-pressure self-contained breathing apparatus (SBCA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Wear skin and eye protection.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Do not allow contact with soil, surface or ground water. Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Contain spills immediately with inert materials (eg. sand, earth). To avoid gelling and foaming problems, do not use water to flush away spills.

Pump into suitable and properly labeled containers.
Small spills can be covered and soaked up with a suitable absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Remove with non-sparking shovel.,
Larger spills can be contained with dike.
Dispose of according to applicable regulations. See Section 13 Disposal Considerations.

7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not get in eyes, on skin, on clothing. Do not swallow. Wash thoroughly after handling. Do not breathe vapours/dust. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations. For personal protection see section 8.
Conditions for safe storage	:	Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards. Hold bulk storage under nitrogen blanket. Store in accordance with good industrial practices.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

Personal protective equipment
Hand protection

Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear gloves made of : PVC (polyvinyl chloride) coated material
Eye protection	:	Use chemical goggles. Eye wash fountain should be located in immediate work area. Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing. Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, gloves, boots, apron or full body-suit will depend on operation. Choose body protection according to the amount and concentration of the dangerous substance at the work place. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or

dispose of properly.

Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday. Good general ventilation should be sufficient for most conditions. Surfactants can cause foaming problems in biological wastewater treatment plants and other high shear operations. PROCESS HAZARD: Sudden release of hot organic chemical vapour or mists from process equipment operating at elevated temperature and pressure, or sudden ingressof air into hot equipment under vacuum, may result in ignitions without the presence of obvious ignition sources. Published 'autoignition' or 'ignition' temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Colour	:	Pale yellow
Odour	:	Mild
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	0 °C
Boiling point/boiling range	:	> 200 °C (1.013 hPa)
Flash point	:	243 °C Method: ASTM D 93, Pensky-Martens closed cup
Evaporation rate	:	< 0,01
Flammability (liquids)	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	< 0,001 hPa (20 °C)
Relative vapour density	:	19,7
Relative density	:	No data available
Density	:	No data available
Solubility(ies)		
Water solubility	:	Soluble
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Molecular weight	:	572 g/mol

10. STABILITY AND REACTIVITY

Reactivity	:	Hazardous polymerisation does not occur.

Chemical stability	:	Stable under normal conditions. Exposure to elevated temperatures can cause product to decompose.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Incompatible materials	:	Avoid strong bases at high temperatures, strong acids, strong oxidizing agents and materials reactive with hydroxyl compounds.
Hazardous decomposition products	:	None under normal conditions of storage and use.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Acute oral toxicity	:	LD50 (Rat): 1.602 mg/kg
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	Remarks: No data available

Skin corrosion/irritation

Components:
Nonylphenol Polyethylene Glycol Ether:

Remarks	:	No data available

Serious eye damage/eye irritation

Components:
Nonylphenol Polyethylene Glycol Ether:

Species	:	Rabbit
Result	:	Irritating to eyes.

Respiratory or skin sensitisation

Components:
Nonylphenol Polyethylene Glycol Ether:

Exposure routes	:	Inhalation
Remarks	:	No data available
Exposure routes	:	Skin contact
Result	:	Not sensitising

Germ cell mutagenicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Germ cell mutagenicity - Assessment	:	Not mutagenic in vivo and in vitro

Carcinogenicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Carcinogenicity - Assessment	:	No data available

Reproductive toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:
Reproductive toxicity - Assessment : No data available

STOT - single exposure

Components:
Nonylphenol Polyethylene Glycol Ether:
Remarks : No data available

STOT - repeated exposure

Components:
Nonylphenol Polyethylene Glycol Ether:
Remarks : No data available

Aspiration toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:
Statement on Aspiration Tox. : No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 0,218 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,148 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 3 mg/l Exposure time: 72 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0,006 mg/l Exposure time: 91 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0,1 mg/l Exposure time: 21 d
Toxicity to microorganisms	:	Remarks: No data available

Persistence and degradability

Components:
Nonylphenol Polyethylene Glycol Ether:
Biodegradability : Result: Readily biodegradable in water.

Bioaccumulative potential

Components:
Nonylphenol Polyethylene Glycol Ether:

Bioaccumulation	:	Bioconcentration factor (BCF): 0,2 - 16
Partition coefficient: n-octanol/water	:	log Pow: 5,67 (25 °C)

Mobility in soil

Components:
Nonylphenol Polyethylene Glycol Ether:
Mobility : Medium: Soil
Remarks: Log Koc = 2.631 (25 °C)

Other adverse effects

Components:
Nonylphenol Polyethylene Glycol Ether:
Additional ecological information : No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Aerobic biological waste water treatment systems can be effective in treating aqueous solutions of surfactants. Consultation with treatment plant staff is recommended (and may be required by law). In typical activated sludge treatment systems, inlet concentrations below 5mg/L have been treated without foaming problems. For disposal of neat surfactant: Incinerate under controlled conditions in accordance with all local and national laws and regulations.
Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Empty containers should be recycled or disposed of through an approved waste management facility.

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Marine pollutant	:	yes

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

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WHMIS	-	Workplace Hazardous Materials Information System

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To the best of PETRONAS knowledge, the information contained herein is accurate and reliable as of the date of publication. Any use of information provided should be undertaken in consultation with a professional with the appropriate expertise, as necessary in the circumstances. No warranty, express or implied, is given as to the quality, accuracy, reliability, applicability or completeness of the contents of this SDS. The information presented here pertains only to the product as shipped. It is the responsibility of the customer to ensure that any activities relating to the product comply with all federal, state or local laws. Any hazards associated with any product regulatory requirements are subject to change and may differ between various locations. Except to the extent required by law, re-publication or retransmission of this SDS, in whole or in part, is strictly prohibited. PETRONAS does not take responsibility for use, transportation, storage, handling, packaging or disposal of the product that is beyond our knowledge and recommendation by this SDS.

Product Stewardship Advisory:
PETRONAS aims to increase awareness of all the hazards associated with the storage, handling and use of its products. Thoroughly reviewing the accompanying Safety Data Sheets and disseminating the information to all dependent and interested parties is an essential part of any 'Responsible Care' programme.

ID / EN

Safety Data Sheet

According to Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

PETRONAS

TERGITOL™ NP-9 Surfactant

Version 1.0 Release Date: 2018/03/08

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : TERGITOL™ NP-9 Surfactant

Recommended use of the chemical and restrictions on use

Recommended use : Cleaners and detergents, paper & textile processing, paints & coatings, agrochemicals and metalworking fluid, laundry, dust control

Restrictions on use : No restriction of use

Manufacturer or supplier's details

Headquarters

Company : PETRONAS Chemicals Group Berhad

Address : Tower 2, PETRONAS Twin Towers,
Kuala Lumpur City Centre,
50088 Kuala Lumpur
Malaysia

Plant Site

Company : PETRONAS Chemicals Derivatives Sdn Bhd

Address : Administration Complex,
Kerteh Industrial Area,
KM 106 Jalan Kuala Terengganu - Kuantan,
24300 Kerteh, Kemaman,
Terengganu, Malaysia

Emergency telephone number : (+609) 830 7555
+6221 2940 6682 Ext 110

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

Serious eye damage/eye irritation : Category 2A

Acute aquatic toxicity : Category 1

Chronic aquatic toxicity : Category 1

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.

P280 Wear eye protection/ face protection.
Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P391 Collect spillage.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance
Chemical nature : Surfactant

Hazardous components

Chemical name	CAS-No.	Concentration (%)
Nonylphenol Polyethylene Glycol Ether	127087-87-0	>= 90 -<= 100

4. FIRST AID MEASURES

If inhaled : If breathed in, move person into fresh air.
If not breathing, give artificial respiration.
If by mouth to mouth use rescuer protection (pocket mask, etc).
If unconscious, place in recovery position and seek medical advice.
If breathing is labored, administer oxygen.
If symptoms persist, call a medical doctor.

In case of skin contact : Wash off with plenty of water.

In case of eye contact : Immediately flush eyes for at least 15 minutes. Get medical attention.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
Continue rinsing eyes during transport to hospital.
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
Eye wash fountain should be located in immediate work area.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Keep respiratory tract clear.
Do NOT induce vomiting.
Do NOT give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.
If symptoms persist, call a medical doctor.

General advice	:	Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended. Consult a medical doctor. First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Most important symptoms and effects, both acute and delayed	:	Contact with eye may cause corneal injury.
Notes to physician	:	Maintain adequate ventilation and oxygenation of the patient. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Unsuitable extinguishing media	:	High volume water jet.Do not use direct water stream. May spread fire.
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.
Hazardous combustion products	:	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.
Specific extinguishing methods	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed off in accordance with local regulations.
Special protective equipment for firefighters	:	Wear positive-pressure self-contained breathing apparatus (SBCA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Isolate area. Keep unnecessary and unprotected personnel from entering the area.

		Keep upwind of spill. Ventilate area of leak or spill. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Collect in suitable and properly labeled containers. Do not use water to flush spills away. Keep in suitable, closed containers for disposal. Keep away from sources of ignition. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not get in eyes, on skin, on clothing. Do not breathe vapours/dust. Do not swallow. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations. For personal protection see section 8.
Conditions for safe storage	:	Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards. Hold bulk storage under nitrogen blanket. The shelf life given is for unopened containers stored under moderate temperature conditions. Shelf life: Use within 24 Months

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection : Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Hand protection

Remarks : Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under standard AS/NZS 2161.10: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to AS/NZS 2161.10) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to AS/NZS 2161.10) is recommended.
The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.
The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Use chemical goggles.
Eye wash fountain should be located in immediate work area.
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Impervious clothing.
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear clean, body-covering clothing.

Hygiene measures	:	When using do not eat or drink. When using do not smoke. Use good personal hygiene. Do not consume or store food in the work area. Wash hands before breaks and at the end of workday. Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Colour	:	Pale yellow
Odour	:	Mild
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	3,8 °C
Boiling point/boiling range	:	> 250 °C (1.013 hPa)
Flash point	:	247 °C Method: ASTM D 93, Pensky-Martens closed cup
Evaporation rate	:	No data available
Flammability (liquids)	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	0,1 hPa (20 °C)
Relative vapour density	:	1
Relative density	:	No data available
Density	:	No data available
Solubility(ies)		
Water solubility	:	Soluble
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	237 mm2/s (25 °C)
Molecular weight	:	616 g/mol

10. STABILITY AND REACTIVITY

Reactivity	:	Hazardous polymerisation does not occur.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Incompatible materials	:	Strong acids and strong basesStrong oxidizing agents
Hazardous decomposition products	:	Decomposition products depend upon temperature, air supply and the presence of other materials.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Acute oral toxicity	:	LD50 (Rat): 1.602 mg/kg
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	Remarks: No data available

Skin corrosion/irritation

Components:
Nonylphenol Polyethylene Glycol Ether:

Remarks	:	No data available

Serious eye damage/eye irritation

Components:
Nonylphenol Polyethylene Glycol Ether:

Species	:	Rabbit
Result	:	Irritating to eyes.

Respiratory or skin sensitisation

Components:
Nonylphenol Polyethylene Glycol Ether:

Exposure routes	:	Inhalation
Remarks	:	No data available
Exposure routes	:	Skin contact
Result	:	Not sensitising

Germ cell mutagenicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Germ cell mutagenicity - Assessment	:	Not mutagenic in vivo and in vitro

Carcinogenicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Carcinogenicity - Assessment	:	No data available

Reproductive toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Reproductive toxicity - Assessment	:	No data available

STOT - single exposure

Components:
Nonylphenol Polyethylene Glycol Ether:

Remarks : No data available

STOT - repeated exposure

Components:
Nonylphenol Polyethylene Glycol Ether:
Remarks : No data available

Aspiration toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:
Statement on Aspiration Tox. : No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 0,218 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,148 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 3 mg/l Exposure time: 72 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0,006 mg/l Exposure time: 91 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0,1 mg/l Exposure time: 21 d
Toxicity to microorganisms	:	Remarks: No data available

Persistence and degradability

Components:
Nonylphenol Polyethylene Glycol Ether:
Biodegradability : Result: Readily biodegradable in water.

Bioaccumulative potential

Components:
Nonylphenol Polyethylene Glycol Ether:

Bioaccumulation	:	Bioconcentration factor (BCF): 0,2 - 16
Partition coefficient: n-octanol/water	:	log Pow: 5,67 (25 °C)

Mobility in soil

Components:
Nonylphenol Polyethylene Glycol Ether:
Mobility : Medium: Soil
Remarks: Log Koc = 2.631 (25 °C)

Other adverse effects

Components:
Nonylphenol Polyethylene Glycol Ether:
Additional ecological : No data available

information

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Do not dump into any sewers, on the ground, or into any body of water. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. Collect in plastic or metal containers for disposal. This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 91/689/EEC. Where ethylene glycol reclamation or sewering are not viable, this product may be incinerated where permitted under national and local regulations.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class	:	9
Packing group	:	III
Labels	:	9

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s.
Class	:	9
Packing group	:	III
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

		N.O.S.
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

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

Pollution category	:	Y
Ship type	:	2
Hazchem Code	:	●3Z

15. REGULATORY INFORMATION

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

Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

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

REACH	:	Not in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory.
NZIoC	:	Not in compliance with the inventory
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory.
PICCS	:	On the inventory, or in compliance with the inventory.
IECSC	:	On the inventory, or in compliance with the inventory.
TCSI	:	Not in compliance with the inventory
TSCA	:	On TSCA Inventory.

16. OTHER INFORMATION

Revision Date	:	2018/03/08
Sources of key data used to compile the Safety Data Sheet	:	ECHA - European Chemicals Agency

Full text of other abbreviations

(Q)SAR	-	(Quantitative) Structure Activity Relationship
ACGIH	-	American Conference of Governmental Industrial Hygienists
AICS	-	Australian Inventory of Chemical Substances
ANTT	-	National Agency for Transport by Land of Brazil
ASTM	-	American Society for the Testing of Materials
bw	-	Body weight
CCHC	-	Chemicals Classification and Hazard Communication
CMR	-	Carcinogen, Mutagen or Reproductive Toxicant
CPR	-	Controlled Products Regulations
DIN	-	Standard of the German Institute for Standardisation
DSL	-	Domestic Substances List (Canada)
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
ERG	-	Emergency Response Guide
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
ICOP	-	Industry Code of Practice on Chemicals Classification and Hazard Communication
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
MY PEL	-	Malaysian Permissible Exposure Limit
n.o.s.	-	Not Otherwise Specified
Nch	-	Chilean Norm
NITE	-	National Institute of Technology and Evaluation
NO(A)EC	-	No Observed (Adverse) Effect Concentration
NO(A)EL	-	No Observed (Adverse) Effect Level
NOELR	-	No Observable Effect Loading Rate
NOM	-	Official Mexican Norm
NTP	-	National Toxicology Program
NZIoC	-	New Zealand Inventory of Chemicals
OCSPP	-	Office of Chemical Safety and Pollution Prevention
OECD	-	Organization for Economic Co-operation and Development
PBT	-	Persistent, Bioaccumulative and Toxic
PICCS	-	Philippines Inventory of Chemicals and Chemical Substances
REACH	-	Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
SADT	-	Self-Accelerating Decomposition Temperature
SDS	-	Safety Data Sheet
STEL	-	Short Term Exposure Limit
TCSI	-	Taiwan Chemical Substance Inventory
TDG	-	Transportation of Dangerous Goods
TSCA	-	Toxic Substances Control Act (United States)
TWA	-	Time Weighted Average
UN	-	United Nations
UNRTDG	-	United Nations Recommendations on the Transport of Dangerous Goods
UVCB	-	Unknown or Variable Composition, Complex Reaction Products and Biological Materials
vPvB	-	Very Persistent and Very Bioaccumulative
WHMIS	-	Workplace Hazardous Materials Information System

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Safety Data Sheet

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TERGITOL™ NP-10 Surfactant

Version 1.0 Release Date: 2018/03/08

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : TERGITOL™ NP-10 Surfactant

Recommended use of the chemical and restrictions on use

Recommended use : Cleaners and detergents, paper & textile processing, paints & coatings, agrochemicals and metalworking fluid

Restrictions on use : No restriction of use

Manufacturer or supplier's details

Headquarters

Company : PETRONAS Chemicals Group Berhad

Address : Tower 2, PETRONAS Twin Towers,
Kuala Lumpur City Centre,
50088 Kuala Lumpur
Malaysia

Plant Site

Company : PETRONAS Chemicals Derivatives Sdn Bhd

Address : Administration Complex,
Kerteh Industrial Area,
KM 106 Jalan Kuala Terengganu - Kuantan,
24300 Kerteh, Kemaman,
Terengganu, Malaysia

Emergency telephone number : (+609) 830 7555
+6221 2940 6682 Ext 110

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

Serious eye damage/eye irritation : Category 2A

Acute aquatic toxicity : Category 1

Chronic aquatic toxicity : Category 1

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear eye protection/ face protection.

Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P391 Collect spillage.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification
No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance
Chemical nature : Surfactant

Hazardous components

Chemical name	CAS-No.	Concentration (%)
Nonylphenol Polyethylene Glycol Ether	127087-87-0	>= 90 -<= 100

4. FIRST AID MEASURES

If inhaled : Move to fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a medical doctor.

In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
Wash skin with plenty of water.
Call a physician if irritation persists.

In case of eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
Continue rinsing eyes during transport to hospital.
If eye irritation persists, consult a specialist.
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Keep respiratory tract clear.
Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.
If symptoms persist, call a medical doctor.
If patient is fully conscious, give two glasses of milk or water at once.

General advice : Move out of dangerous area.

		Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended. Consult a medical doctor.
Most important symptoms and effects, both acute and delayed	:	Contact with eye may cause corneal injury.
Notes to physician	:	The decision of whether to induce vomiting or not should be made by a physician. If lavage is performed, suggest endotracheal and/or oesophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	For small fires, use: Carbon dioxide. Dry chemical fire extinguishers. For large fires, use: Water fog or fine spray. Alcohol resistant foam.
Unsuitable extinguishing media	:	High volume water jet.
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Burning can produce the following combustion products: Carbon monoxide and/or carbon dioxide. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.
Specific extinguishing methods	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed off in accordance with local regulations.
Special protective equipment for firefighters	:	Wear positive-pressure self-contained breathing apparatus (SBCA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Wear suitable protective equipment. Wear skin and eye protection. Floor may be slippery. Use care to avoid falling. Wear respiratory protection when its use is identified for certain contributing scenario.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Do not allow contact with soil, surface or ground water. Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for	:	Contain spills immediately with inert materials (eg. sand,

containment and cleaning up	earth). To avoid gelling and foaming problems, do not use water to flush away spills. Small spills can be covered and soaked up with a suitable absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Remove with non-sparking shovel., Collect in suitable and properly labeled containers. Larger spills can be contained with dike. Pump into suitable and properly labeled containers. Dispose of according to applicable regulations. See Section 13 Disposal Considerations. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not get in eyes, on skin, on clothing. Do not swallow. Wash thoroughly after handling. Do not breathe vapours/dust. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations. For personal protection see section 8.
Conditions for safe storage	:	Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards. Store in accordance with good industrial practices.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

Personal protective equipment
Hand protection

Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear gloves made of : PVC (polyvinyl chloride) coated material
Eye protection	:	Use chemical goggles. Eye wash fountain should be located in immediate work area. Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place. Use protective clothing chemically resistant to this material.

		Selection of specific items such as face shield, gloves, boots, apron or full body-suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday. Good general ventilation should be sufficient for most conditions. Surfactants can cause foaming problems in biological wastewater treatment plants and other high shear operations. PROCESS HAZARD: Sudden release of hot organic chemical vapour or mists from process equipment operating at elevated temperature and pressure, or sudden ingressof air into hot equipment under vacuum, may result in ignitions without the presence of obvious ignition sources. Published 'autoignition' or 'ignition' temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Colour	:	Colourless
Odour	:	Mild
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	6,1 °C
Boiling point/boiling range	:	> 250 °C (1,013 hPa)
Flash point	:	197 °C Method: ASTM D 93, Pensky-Martens closed cup
Evaporation rate	:	< 0,01
Flammability (liquids)	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	0,001 hPa (20 °C)
Relative vapour density	:	1
Relative density	:	No data available
Density	:	No data available
Solubility(ies)		
Water solubility	:	Soluble
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Molecular weight	:	682 g/mol

10. STABILITY AND REACTIVITY

Reactivity	:	Hazardous polymerisation does not occur.
Chemical stability	:	Stable under normal conditions. Exposure to elevated temperatures can cause product to decompose.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Incompatible materials	:	Avoid strong bases at high temperatures, strong acids, strong oxidizing agents and materials reactive with hydroxyl compounds.
Hazardous decomposition products	:	None under normal conditions of storage and use.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Acute oral toxicity	:	LD50 (Rat): 1.602 mg/kg
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	Remarks: No data available

Skin corrosion/irritation

Components:
Nonylphenol Polyethylene Glycol Ether:

Remarks	:	No data available

Serious eye damage/eye irritation

Components:
Nonylphenol Polyethylene Glycol Ether:

Species	:	Rabbit
Result	:	Irritating to eyes.

Respiratory or skin sensitisation

Components:
Nonylphenol Polyethylene Glycol Ether:

Exposure routes	:	Inhalation
Remarks	:	No data available
Exposure routes	:	Skin contact
Result	:	Not sensitising

Germ cell mutagenicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Germ cell mutagenicity - Assessment	:	Not mutagenic in vivo and in vitro

Carcinogenicity

Components:

Nonylphenol Polyethylene Glycol Ether:
Carcinogenicity - Assessment : No data available

Reproductive toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:
Reproductive toxicity - Assessment : No data available

STOT - single exposure

Components:
Nonylphenol Polyethylene Glycol Ether:
Remarks : No data available

STOT - repeated exposure

Components:
Nonylphenol Polyethylene Glycol Ether:
Remarks : No data available

Aspiration toxicity

Components:
Nonylphenol Polyethylene Glycol Ether:
Statement on Aspiration Tox. : No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:
Nonylphenol Polyethylene Glycol Ether:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 0,218 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,148 mg/l Exposure time: 48 h
Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 3 mg/l Exposure time: 72 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0,006 mg/l Exposure time: 91 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0,1 mg/l Exposure time: 21 d
Toxicity to microorganisms	:	Remarks: No data available

Persistence and degradability

Components:
Nonylphenol Polyethylene Glycol Ether:
Biodegradability : Result: Readily biodegradable in water.

Bioaccumulative potential

Components:
Nonylphenol Polyethylene Glycol Ether:

Bioaccumulation	:	Bioconcentration factor (BCF): 0,2 - 16
Partition coefficient: n-octanol/water	:	log Pow: 5,67 (25 °C)

Mobility in soil

Components:
Nonylphenol Polyethylene Glycol Ether:

Mobility	:	Medium: Soil Remarks: Log Koc = 2.631 (25 °C)

Other adverse effects

Components:
Nonylphenol Polyethylene Glycol Ether:

Additional ecological information	:	No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Aerobic biological waste water treatment systems can be effective in treating aqueous solutions of surfactants. Consultation with treatment plant staff is recommended (and may be required by law). In typical activated sludge treatment systems, inlet concentrations below 5mg/L have been treated without foaming problems. For disposal of neat surfactant: Incinerate under controlled conditions in accordance with all local and national laws and regulations. Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Empty containers should be recycled or disposed of through an approved waste management facility.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class	:	9
Packing group	:	III
Labels	:	9

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s.
Class	:	9

Packing group	:	III
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

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

Pollution category	:	Y
Ship type	:	2
Hazchem Code	:	●3Z

15. REGULATORY INFORMATION

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

Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

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

REACH	:	Not in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory.
NZIoC	:	Not in compliance with the inventory
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory.
PICCS	:	On the inventory, or in compliance with the inventory.
IECSC	:	On the inventory, or in compliance with the inventory.
TCSI	:	Not in compliance with the inventory
TSCA	:	On TSCA Inventory.

16. OTHER INFORMATION

Revision Date	:	2018/03/08
Sources of key data used to compile the Safety Data Sheet	:	ECHA - European Chemicals Agency

Full text of other abbreviations

(Q)SAR	-	(Quantitative) Structure Activity Relationship
ACGIH	-	American Conference of Governmental Industrial Hygienists
AICS	-	Australian Inventory of Chemical Substances
ANTT	-	National Agency for Transport by Land of Brazil

ASTM	-	American Society for the Testing of Materials
bw	-	Body weight
CCHC	-	Chemicals Classification and Hazard Communication
CMR	-	Carcinogen, Mutagen or Reproductive Toxicant
CPR	-	Controlled Products Regulations
DIN	-	Standard of the German Institute for Standardisation
DSL	-	Domestic Substances List (Canada)
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
ERG	-	Emergency Response Guide
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
ICOP	-	Industry Code of Practice on Chemicals Classification and Hazard Communication
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
MY PEL	-	Malaysian Permissible Exposure Limit
n.o.s.	-	Not Otherwise Specified
Nch	-	Chilean Norm
NITE	-	National Institute of Technology and Evaluation
NO(A)EC	-	No Observed (Adverse) Effect Concentration
NO(A)EL	-	No Observed (Adverse) Effect Level
NOELR	-	No Observable Effect Loading Rate
NOM	-	Official Mexican Norm
NTP	-	National Toxicology Program
NZIoC	-	New Zealand Inventory of Chemicals
OCSPP	-	Office of Chemical Safety and Pollution Prevention
OECD	-	Organization for Economic Co-operation and Development
PBT	-	Persistent, Bioaccumulative and Toxic
PICCS	-	Philippines Inventory of Chemicals and Chemical Substances
REACH	-	Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
SADT	-	Self-Accelerating Decomposition Temperature
SDS	-	Safety Data Sheet
STEL	-	Short Term Exposure Limit
TCSI	-	Taiwan Chemical Substance Inventory
TDG	-	Transportation of Dangerous Goods
TSCA	-	Toxic Substances Control Act (United States)

TWA	-	Time Weighted Average
UN	-	United Nations
UNRTDG	-	United Nations Recommendations on the Transport of Dangerous Goods
UVCB	-	Unknown or Variable Composition, Complex Reaction Products and Biological Materials
vPvB	-	Very Persistent and Very Bioaccumulative
WHMIS	-	Workplace Hazardous Materials Information System

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