Nonene

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of issue: 05/27/2015 Revision date: 04/Jul/2017 Version: 4

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

1.1. Product identifier

Product form	:	Substance
Trade name	:	Nonene
IUPAC name	:	nonene
CAS No	:	97280-95-0
Synonyms	:	Propene trimer / Nonene, structural isomers/ Tripropylene

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

Use of the substance/mixture	:	Production of nonylphenol and dinonylphenol ethoxylates with application on the tensoatives market

1.3. Details of the supplier of the safety data sheet

US office:
Braskem S.A.
5100 Westheimer Rd - Suite 495
Houston, 77056 - USA
Tel: 713 255 4747
Fax: 713 255 4740

Manufacturer:
Braskem S/A
Rua da União, 765 - Jardim Sônia Maria- Mauá/SP – Brasil
Cep. 09380-900 - Brazil

productsafety@braskem.com

1.4. Emergency telephone number

Emergency number	:	+55 (11) 4478-1777

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Liq. 2 H225
Eye Irrit. 2A H319
Asp. Tox. 1 H304

Full text of H-statements: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS02 GHS07 GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H225 - Highly flammable liquid and vapour
H304 - May be fatal if swallowed and enters airways
H319 - Causes serious eye irritation

Precautionary statements (GHS-US) :
P210 - Keep away from heat, sparks, open flames, hot surfaces, No smoking. - No smoking
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P264 - Wash hands thoroughly after handling
P280 - Wear eye protection, protective clothing, protective gloves
P301+P310 - If swallowed: Immediately call a POISON CENTER
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse

skin with water/shower
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P331 - Do NOT induce vomiting
P337+P313 - If eye irritation persists: get medical advice/attention
P370+P378 - In case of fire: Use dry extinguishing powder, alcohol resistant foam to extinguish
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/container to comply with applicable local, national and international regulation.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : UVCB
Name : Nonene-US
CAS No : 97280-95-0

Name	Product identifier	%	GHS-US classification
Nonene	(CAS No) 97280-95-0	> 98	Flam. Liq. 3, H226 Eye Irrit. 2A, H319 Asp. Tox. 1, H304

Full text of H-statements: see section 16
Synonym: Tripropylene, Nonene (all isomers)

3.2. Mixture

Not applicable

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to fresh air. In case of irregular breathing or respiratory arrest provide artificial respiration. Immediately get medical attention.

First-aid measures after skin contact : Rinse immediately with plenty of water for 15 minutes. Remove contaminated clothing and shoes. Immediately get medical attention.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Immediately get medical attention.

First-aid measures after ingestion : Do not induce vomiting. Drain stomach by gastric lavage under qualified medical supervision. Immediately get medical attention.

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

Symptoms/injuries after inhalation : May cause drowsiness or dizziness. Narcosis. Aspiration of this material may cause chemical pneumonia. Asphyxiant in high concentrations.

Symptoms/injuries after skin contact : Frequent or prolonged contact with skin may cause dermal irritation. Prolonged or repeated contact with the skin may cause dermatitis.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. Ingestion may cause nausea and vomiting. Depression of the central nervous system. Convulsions. Death.

4.3. Indication of any immediate medical attention and special treatment needed

Drain stomach by gastric lavage under qualified medical supervision.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : For large fire : Foam. For small fire : Dry extinguishing powder. Carbon dioxide. Water mist.

Unsuitable extinguishing media : Do not use a water jet since it may cause the fire to spread.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Highly flammable liquid and vapour. Material can accumulate some static charge during transfer.

Explosion hazard : May form flammable/explosive vapour-air mixture. Vapor heavier than air may travel considerable distance to a source of ignition and flash back.

5.3. Advice for firefighters

Firefighting instructions	:	Cool down the containers exposed to heat with a water spray.
Protective equipment for firefighters	:	For large fire : Use self-contained breathing apparatus and chemically protective clothing. For small fire : Fight fire from safe distance and protected location. Refer to section 8.
Other information	:	Flammable liquid and vapour. Exposure to fire may cause containers to rupture/explode. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	Use only antistatically equipped (spark-free) tools. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/fume/gas/mist/vapours/spray. Stop leak if safe to do so. If spilled, may cause the floor to be slippery.

6.1.1. For non-emergency personnel

Protective equipment	:	Refer to section 8.
Emergency procedures	:	Use only antistatically equipped (spark-free) tools. Eliminate every possible source of ignition.

6.1.2. For emergency responders

Protective equipment	:	Refer to section 8.
Emergency procedures	:	Evacuate unnecessary personnel. Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Prevent entry to sewers and public waters. Do not discharge into drains or the environment. Do not discharge into surface water.

6.3. Methods and material for containment and cleaning up

For containment	:	Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Methods for cleaning up	:	Take up large spills with pump or vacuum. Use only antistatically equipped (spark-free) tools. Absorb remaining liquid with sand or inert absorbent and remove to safe place. Consult the appropriate authorities about waste disposal.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Handle in accordance with good industrial hygiene and safety procedures. Ground/bond container and receiving equipment. Carry out operations in the open/under local exhaust/ventilation or with respiratory protection. Never use pressure to empty container.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Ground equipment electrically. Keep away from sources of ignition - No smoking. Avoid static electricity discharges. Provide adequate ventilation. Use explosion-proof ventilating equipment. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Storage conditions	:	Keep away from ignition sources (including static discharges). Store tightly closed in a dry, cool and well-ventilated place.
Incompatible products	:	Strong oxidizing agents. Chlorine. Fluorine (F). magnesium perchlorate.
Packaging materials	:	Carbon steel. stainless steel.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Nonene (27215-95-8)		
PNEC	PNEC	0.0053 mg/l freshwater

Nonene-US (27215-95-8)		
PNEC	PNEC	0.0053 mg/l freshwater

8.2. Exposure controls

Appropriate engineering controls	:	Provide adequate ventilation to minimize dust concentrations. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Proper grounding procedures to avoid static electricity should be followed.
Personal protective equipment	:	Gas mask. Protective goggles. Gloves.

Hand protection	:	Protective gloves made of PVC. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.
Eye protection	:	Chemical goggles or face shield with safety glasses.
Skin and body protection	:	Wear suitable protective clothing.
Respiratory protection	:	Respirator equipped with cartridges for organic fume for concentration up to 1000 ppm and open system.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	colourless
Odour	:	characteristic
Odour threshold	:	No data available
pH	:	not applicable
Relative evaporation rate (butyl acetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	135 – 140 °C
Flash point	:	20°C
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapour pressure	:	40 mm Hg at 19°C
Relative vapour density at 20 °C	:	No data available
Relative density	:	0.734 - 0.745 @ 20°C (water=1)
Relative gas density	:	4.35 (air=1)
Solubility	:	Soluble in benzene. Water: Insoluble Ethanol: Soluble
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	0.851 mm²/s @ 20°C
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	0.8 - 3.9 vol %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable at room temperature.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Avoid ignition sources. Keep away from heat. Avoid static electricity discharges.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO2). hydrocarbons.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified
(Based on available data, the classification criteria are not met)

Nonene (\f)27215-95-8	
LD50 dermal rabbit	> 2020 mg/kg

Nonene-US (27215-95-8)	
LD50 dermal rabbit	> 2020 mg/kg

Nonene (27215-95-8)	
LD50 oral rat	2100 mg/kg
LD50 dermal rabbit	5000 mg/kg
ATE US (oral)	2100.000 mg/kg bodyweight
ATE US (dermal)	5000.000 mg/kg bodyweight

Skin corrosion/irritation : Not classified
(Based on available data, the classification criteria are not met)
pH: not applicable

Serious eye damage/irritation : Causes serious eye irritation.
pH: not applicable

Respiratory or skin sensitisation : Not classified
(Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified
(Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified
(Based on available data, the classification criteria are not met)

Reproductive toxicity : Not classified
(Based on available data, the classification criteria are not met)

Specific target organ toxicity (single exposure) : Not classified
(Based on available data, the classification criteria are not met)

Specific target organ toxicity (repeated exposure) : Not classified
(Based on available data, the classification criteria are not met)

Aspiration hazard : May be fatal if swallowed and enters airways.

Symptoms/injuries after inhalation : May cause drowsiness or dizziness. Narcosis. Aspiration of this material may cause chemical pneumonia. Asphyxiant in high concentrations.

Symptoms/injuries after skin contact : Frequent or prolonged contact with skin may cause dermal irritation. Prolonged or repeated contact with the skin may cause dermatitis.

Symptoms/injuries after eye contact : Causes serious eye irritation.

Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. Ingestion may cause nausea and vomiting. Depression of the central nervous system. Convulsions. Death.

SECTION 12: Ecological information

12.1. Toxicity

Nonene (27215-95-8)	
LC50 fish 2	1.2 mg/l

Nonene-US (27215-95-8)	
LC50 fish 2	1.2 mg/l

12.2. Persistence and degradability

Nonene (27215-95-8)	
Persistence and degradability	expected to be biodegradable by soil organisms. May penetrate and reach the ground water. Partial evaporation of the product should occur and it is expected that it be biodegradable by aquatic organisms.

Nonene-US (27215-95-8)	
Persistence and degradability	expected to be biodegradable by soil organisms. May penetrate and reach the ground water. Partial evaporation of the product should occur and it is expected that it be biodegradable by aquatic organisms.

12.3. Bioaccumulative potential

Nonene (27215-95-8)	
Bioaccumulative potential	Bioaccumulative potential.

Nonene-US (27215-95-8)	
Bioaccumulative potential	Bioaccumulative potential.

Nonene (27215-95-8)	
BCF fish 1	(low potential to bioaccumulate)

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer :

Effect on the global warming : No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Dispose of this material and its container to hazardous or special waste collection point. Disposal must be done according to official regulations.

Waste disposal recommendations : Dispose of this material and its container to hazardous or special waste collection point. Do not allow to enter into surface water or drains. Do not re-use empty containers. Consult the appropriate local waste disposal expert about waste disposal.

SECTION 14: Transport information

Classification for LAND transport: ADR / RID

14.1 UN Number : UN2057

14.2 Proper Shipping Name : TRIPROPYLENE

14.3 Class : 3

14.4 Packing group : II

14.5 Environmental hazards : Product is considered environmentally hazardous based on available data.

14.6 Special precautions for user : Hazard identification number (Kemler No.): 33

Classification for SEA transport: IMO - IMDG

14.1 UN Number	:	UN2057
14.2 Proper shipping name	:	TRIPROPYLENE
14.3 Class	:	3
14.4 Packing group	:	II
14.5 Environmental hazards	:	Product considered marine pollutant based on available data.
14.6 Special precautions for user	:	No supplementary information available
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:		
Product Name	:	Nonene (all isomers)

Classification for AIR transport: IATA - ICAO

14.1 UN Number	:	UN2057
14.2 Proper Shipping Name	:	Tripropylene
14.3 Class	:	3
14.4 Packing group	:	II
14.5 Environmental hazards	:	Product is considered environmentally hazardous based on available data.
14.6 Special precautions for user	:	No supplementary information available

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product therefore it cannot be considered exhaustive. See guidelines of ADR, RID, IMDG and IATA regulations before transporting the product. The transporting organization is responsible for compliance with laws, regulations and rules for the transport of the material.

SECTION 15: Regulatory information

15.1. US Federal regulations

Nonene (27215-95-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA
No additional information available

Nonene (27215-95-8)
Listed on the Canadian DSL (Domestic Sustances List)

EU-Regulations
No additional information available

Nonene (27215-95-8)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

No additional information available

15.2.2. National regulations

Nonene (27215-95-8)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

No additional information availble

SECTION 16: Other information

Sources of Key data : SDS

Abbreviations and acronyms : ASTM - American Society for Testing and Materials . CLP - Classification, Labelling and Packaging. CSR - Chemical Safety Report. EC - European Community. GHS - Globally Harmonised System. EEC - European Economic Community. Overland transport (ADR). PVC (Polyvinyl chloride). REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals. SDS - Safety Data Sheet.

Full text of H-statements:

------	Asp. Tox. 1	Aspiration hazard, Category 1
------	Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
------	Flam. Liq. 2	Flammable liquids Category 2
------	Flam. Liq. 3	Flammable liquids, Category 3
------	H225	Highly flammable liquid and vapour
------	H226	Flammable liquid and vapour
------	H304	May be fatal if swallowed and enters airways
------	H319	Causes serious eye irritation

Braskem - SDS US

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. It warns that the handling of any chemical substance requires the previous knowledge of its hazards for the user. It is up to the user of the product company providing this SDS to and promote the training of its employees about possible risks come upon of the product. The information contained herein is not absolute, but only general information on the use of the chemical and indication of safety and security measures.