

## 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

Manufacturer:  
Braskem S.A.  
Rua da União, 756  
Mauá, SP, CEP: 09380-900, Brasil

Contact Email : productsafety@braskem.com  
Emergency Telephone Number (CHEMTREC) : 1-800-424-9300

## 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  | %    |
|--------|---------------------|------|
| Nonene | (CAS No) 97280-95-0 | > 98 |

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                               | : 131.5 – 147 °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   |
| Relative gas density                        | : 4.35 (air=1)  |
| Solubility                                  | : Soluble in benzene.<br>Water: Insoluble<br>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, CO<sub>2</sub>). 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 Substances 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 available

## 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.*