

**1 – Identification**

**GHS Product identifier:** **PVC - HOMOPOLYMERS AND COPOLYMERS**

**Other means of identification:** Norvic SP 700RA, Norvic SP 800, Norvic SP 767RA, Norvic SP 1000, Norvic SP 1300HP, Norvic SP 1300FA, Norvic S80SA, Norvic P70HMF, Norvic P72HM, Norvic P74HM, Norvic P68MMF, Norvic S100BM, Norvic EP121LM, Norvic EP123OCM, Norvic P75LMT, Norvic S64BM, Norvic P55LM, Norvic P78LM, Norvic CS57/08SM, Norvic CS57/14SM, Norvic CS50/15SM, Norvic CS60/14BM, Norvic CS62/08BM, VINISOL H, VINISOL OH, VINISOL COOH, SP REPRO, SP UMIDA and SP AVARIA.

**Recommended use of the chemical and restrictions on use:** Industrial use.

**Name:** **BRASKEM**

**Address:** **Centro Prod. PVC Mal. Deodoro**  
Rodovia Divaldo Suruagy, Km. 12 V  
CEP: 57160-000  
Marechal Deodoro/AL - Brasil

**Phone number:** +55 82 3326 6828

**Emergency phone number:** 0800 821 660

**Name:** **BRASKEM**

**Address:** **Centro Prod. PVC Camaçari**  
Rua Hidrogênio, 3342  
CEP: 42810-280  
Camaçari/BA – Brasil

**Phone number:** +55 71 3413 2737

**Emergency phone numbers:** +55 11 3413 2833

**Name:** **BRASKEM**

**Address:** **Escritório Odebrecht São Paulo**  
Rua Lemos Monteiro, 120  
Butantã - São Paulo - SP  
CEP 05501-050

**Phone number:** +55 11 3576 9000

**Emergency phone numbers:** +55 11 3576 9015

**2 – Hazard identification**

<b>Classification of the substance (*):</b>	<b>Hazard Classes</b>	<b>Category</b>
	Specific target organ toxicity (repeated exposure)	2

**GHS label elements, including precautionary statements (\*\*):**
**Pictograms:**


**Signal word:** Warning

**Hazard statements:** H373: May cause damage to the lungs through prolonged or repeated exposure

**Precautionary statements:**

Prevention:  
 P260: Do not breathe dust/fume/gas/mist/vapours/spray.

Response:  
 P314: Get medical advice/attention if you feel unwell.

Disposal:  
 P501: Dispose of contents/container should be in accordance with local regulations.

(\*) GHS 2011 (Globally harmonized system of classification and labeling of chemicals 2011).

**Other hazards which do not result in classification:** There are no information regarding the other hazards of this product.

### 3 – Composition/information on ingredients

#### SUBSTANCE

**Common name of the substance:** Polymer.  
**Synonyms:** Polyvinyl chloride polymers.

#### Hazardous ingredients:

Name	CAS number
polyvinyl chloride	9002-86-2
vinyl chloride-vinyl acetate copolymer	9003-22-9
2-propenoic acid, 2-hydroxypropyl ester, polymer with chloroethene and ethenyl acetate	41618-91-1
2-Butenedioic acid (Z)-, monobutyl ester, polymer with chloroethene and ethenyl acetate	41934-30-9

### 4 – First-aid measures

**Inhalation:** If any intoxication symptoms occur, after inhalation of dusts or vapors of this product, take the victim to fresh air. Seek medical attention and take the product container or label with you.

**Skin contact:** It is unlikely that the contact of the product with skin causes irritation at room temperature. If contact with the hot liquefied product or, if irritation occurs, wash exposed skin with plenty of water. Take off contaminated clothes and shoes. Seek medical attention and take the product container or label with you.

**Eye contact:** First check the victim for contact lenses and remove them, if present. Wash exposed eyes with abundant water in room temperature for at least 15 minutes, lifting the eyelid while washing them. Seek medical attention and take the product container or label with you.

**Ingestion:** DO NOT INDUCE VOMITING. Wash the mouth with plenty of water. In case of spontaneous vomiting, keep the head below the level of the hips. If the individual is lying down, keep him/her in lateral position to avoid aspiration of the gastric content. Seek immediate medical attention and take the product container or label with you.

**Most important symptoms/effects, acute and delayed:** During the manufacture processes, vapors that may be formed at high temperatures, can be irritant to the respiratory tract and may cause coughing and sneezing. If in contact with the skin, the product, in the liquid form or leaked gas, may cause burns. Inhalation of dusts from the product may cause pneumoconiosis and other adverse effects on the

**Notes to an attending physician:** lungs, after repeated or prolonged exposure.  
Symptomatic treatment. There is no specific antidote.

## 5 – Fire-fighting measures

**Suitable extinguishing media:** Combustible product. Small fire: use dry chemical, carbon dioxide (CO<sub>2</sub>) sand, dry earth or regular foam to extinguish.  
Large fire: use water spray, fog or regular foam to extinguish.  
Move containers from fire area, if you can do it without risk. Dike fire-control water for later disposal.

**Specific hazards arising from the chemical:** Fire may produce irritating, corrosive and/or toxic gases of hydrogen chloride, phosgene, carbon monoxide and carbon dioxide.

**Special protective actions for fire-fighters:** Cool containers with flooding quantities of water until well after fire is out. Wear suitable protective clothing and positive pressure self-contained breathing apparatus. Stay upwind.

## 6 – Accidental release measures

**Personal precautions, protective equipment and emergency procedures:**

For non-emergency personnel: In case of spilling or leaking, eliminate all ignition sources. Use personal protective equipment (PPE). Avoid contact of the product with the skin, eyes and mucous membranes. Do not handle broken packaging unless wearing personal protective equipment. Do not touch or walk through spilled material. Stay upwind.

For emergency responders: Use suitable PPE. Keep unauthorized personnel away.

**Environmental precautions:** Avoid environmental contamination. In case of spilling or leaking, contain the spill immediately. Do not allow dispersed product to enter in sewers or watercourses. If product enters in the watercourses, immediately interrupt the human or animal use and contact local environmental agency or the Braskem S/A emergency center, since the measures to be taken depend on a variety of factors such as the accident proportion, the watercourse characteristics and the amount of spilled product.

**Methods and materials for containment and cleaning up:** Use PPE. Isolate contaminated area and signalize it. Prevent entry into waterways, sewers, basements or confined areas.  
Paved areas: collect the spilled material with a clean shovel and place it in marked and tightly closed containers for later disposal. Wash the area with water, taking preventive measures to avoid environmental contamination by wastewater. Spread product can not be used further and must be disposed of. Contact the manufacturer for return and disposal.  
Soil: remove contaminated soil until achieving uncontaminated soil and conduct in accordance with the information above.

## 7 – Handling and storage

**Precautions for safe handling:** Ensure good ventilation in the work area. Handle the product following the Security and Industrial Hygiene. Avoid the contact of the product with skin, eyes and clothes. Avoid inhalation of dusts of this product. Do not eat, drink or smoke while handling the product.

**Conditions for safe storage, including any incompatibilities:** Store the product in the original package, tightly closed, at room temperature, protected from sunlight. Store away from children and animals.  
Recommended packaging material: paper and/or plastic.

**8 – Exposure controls/personal protection**
**Control parameters**

Occupational exposure limit values:

Polyvinyl chloride:

 ACGIH: TWA 1 mg/m<sup>3</sup> \*(R) (ACGIH, 2012).

NIOSH REL: It is not established by NIOSH.

OSHA PEL: It is not established by OSHA.

(R): Respirable fraction.

\* Basis: pneumoconiosis; lower respiratory tract irritation; pulmonary functions changes.

Biological exposure indices:

There are no biological exposure indices established by ACGIH (2012).

**Appropriate engineering controls:**

Provide local ventilation at workplace. Provide exhaust ventilation where processes require. Provide emergency shower and eye washer near the workplace.

**Individual protection measures, such as personal protective equipment (PPE)**

Eye/face protection:

Safety goggles (protection against dust).

Skin protection:

Appropriate protective clothes and natural rubber gloves.

Respiratory protection:

Respiratory protection with filter against dusts.

Thermal hazards:

Not available.

**9 – Physical and chemical properties**
**Appearance:**

White solid powder.

**Odour:**

It is not available.

**Odour threshold:**

It is not available.

**pH:**

It is not available.

**Melting point/freezing point:**

It is not available.

**Initial boiling point and boiling range:**

It is not available.

**Flash point:**

It is not available.

**Evaporation Rate:**

It is not available.

**Flammability (solid, gas):**

It is not available.

**Upper/lower flammability or explosive limits:**

It is not available.

**Vapour pressure:**

It is not available.

**Vapour density:**

It is not available.

**Density:**

 1,380 – 1,400 kg/m<sup>3</sup> (1.38 – 1.40 g/cm<sup>3</sup>).

**Solubility:**

Insoluble in water; soluble in cyclohexanone and ketones.

**Partition coefficient: n-octanol/water:**

It is not available.

**Auto-ignition temperature:**

849.2°F (454°C).

**Decomposition temperature:**

It is not available.

**Viscosity:**

It is not available.

**Corrosivity:**

It is not available.

**Oxidation/ Reduction:**

It is not available.

**10 – Stability and reactivity**
**Reactivity:**

None, when properly stored and handled.

**Chemical stability:**

This product is stable in normal temperature and storage conditions. It does not depolymerize in these conditions.

<b>Possibility of hazardous reactions:</b>	<u>Polyvinyl chloride</u> : It reacts violently with fluorine (NIOSH, 2005).
<b>Conditions to avoid:</b>	Sources of ignition, heat and contact with incompatible substances.
<b>Incompatible materials:</b>	Avoid contact with acetal or acetalic copolymers and amine-containing material during the industrial processes.
<b>Hazardous decomposition products:</b>	Not available.

## 11 – Toxicological information

<b>Acute toxicity:</b>	There are no data available in the literature regarding the acute toxicity effects of this product.
<b>Skin corrosion/irritation:</b>	There are no data available in the literature regarding the skin irritation potential of this product.
<b>Serious eye damage/irritation:</b>	There are no data available in the literature regarding the potential eye irritant effects of this product.
<b>Respiratory or skin sensitization:</b>	There are no data available in the literature regarding the sensitization potential of this product.
<b>Germ cell mutagenicity:</b>	There are no data available in the literature regarding the potential eye irritant effects of this product.
<b>Carcinogenicity:</b>	<u>Polyvinyl chloride</u> : The agent is not classifiable as to its carcinogenicity to humans by IARC (group 3) (IARC, 2012). The available studies on polyvinyl chloride, which indicate an elevated proportion of digestive system cancer in male and female workers and possibly of cancers of the breast and urinary organs in female workers involved in the fabrication of plastics, including polyvinyl chloride, are insufficient to evaluate the carcinogenicity of this compound (IARC, 1999).
<b>Reproductive toxicity:</b>	There are no data available in the literature regarding the reproductive toxicity of this product.
<b>Specific target organ toxicity - single exposure:</b>	Exposure to dusts of this product may cause respiratory irritation with coughing and sneezing.
<b>Specific target organ toxicity - repeated exposure:</b>	<u>Polyvinyl chloride</u> : Exposure to PVC dust particles can cause pneumoconiosis, irritation of lower respiratory tract and alterations in pulmonary function (ACGIH, 2012).
<b>Aspiration hazard:</b>	There are no data available in the literature regarding the aspiration hazard of this product.

## 12 – Ecological information

### Ecotoxicity

<b>Persistence and degradability:</b>	High persistence and low degradability are expected for this product.
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There are no data available in the literature regarding the ecotoxicity, bioaccumulative potential, mobility in soil or other adverse effects on the environment of this product.

## 13 – Disposal considerations

### Disposal methods

Mixture residues:	If this product becomes improper for use or in disuse, contact the company Braskem S/A for devolution and final destination. Do not discard in sewers or watercourses. Disposal should be in accordance with local, state or national legislation.
Contaminated containers:	Do not use the empty package. The packages should be washed before the discard. The inadequate destination of the empty package and product waste in the environment causes soil, water and air contamination, harming fauna, flora and the population's health.

## 14 – Transport information

### Land (Brazil):

Brazilian Legislation: Decreto n°. 96.044 de 18 de maio de 1988. Resolução n° 420 de 12 de fevereiro de 2004.

### Sea:

INTERNATIONAL MARITIME ORGANIZATION. International Maritime Dangerous Goods Code (IMDG Code, 2010).

### Air:

INTERNATIONAL AIR TRANSPORT ASSOCIATION. Dangerous Goods Regulation. 54<sup>th</sup> (IATA, 2013).

### Classification for land transportation (Brazil):

Not dangerous goods.

### Classification for sea transportation:

Not dangerous goods.

### Classification for air transportation:

Not dangerous goods.

## 15 – Regulatory information

This Safety Data Sheet (SDS) was prepared in accordance to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) – 4<sup>th</sup> ed. (2011).

## 16 – Other information

The data herein are based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data do not replace any guarantee regarding the products properties. It is the user's responsibility to ensure that his/her activities comply with Federal, State and Local laws.

**Literature references:** AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH). **Threshold Limit Values (TLVs®) and Biological Exposure Indices (BEIs®)**. Cincinnati, OH, 2012.

BRASIL. Decreto n° 96.044, de 18 de maio de 1988. Aprova o Regulamento para o transporte Rodoviário de Produtos Perigosos e dá outras providências. **Diário Oficial [da] União**, Poder Executivo, Brasília, DF, 19 maio 1988.

BRASIL. Ministério dos Transportes. Resolução n° 420, de 12 de fevereiro de 2004. Aprova as instruções Complementares ao Regulamento do Transporte Terrestre de Produtos Perigosos. **Diário Oficial [da] União**, Poder Executivo, Brasília, DF, 31 maio 2004.

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INTERNATIONAL AGENCY FOR RESEARCH FOR CANCER (IARC). **Agents Classified by the IARC Monographs**. Lyon, France: World Health Organization, 2012. Available on: <<http://monographs.iarc.fr/ENG/Classification/ClassificationsGroupOrder.pdf>>. Access in: Apr. 5<sup>th</sup>, 2013.

INTERNATIONAL AGENCY FOR RESEARCH FOR CANCER (IARC). **Some Monomers, Plastics and Synthetic Elastomers, and Acrolein:** Summary of Data Reported and Evaluation. Lyon, France: World Health Organization, 1999. Available on: <<http://monographs.iarc.fr/ENG/Monographs/vol19/volume19.pdf>>. Access in: Apr. 5<sup>th</sup>, 2013.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA). **Dangerous Goods Regulation.** 54<sup>th</sup> ed. Montreal, Canada, 2013.

INTERNATIONAL MARITIME ORGANIZATION (IMO). **International Maritime Dangerous Goods Code (IMDG Code).** London, England, 2012.

PLANITOX – The Science-based Toxicology Company Database.

THE NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH (NIOSH). **International Chemical Safety Cards:** Polyvinyl chloride ICSC: 1487. Atlanta, United States of America: Centers for Disease Control and Prevention, 2005. Available on: <<http://www.cdc.gov/niosh/ipcsneng/neng1487.html>>. Access in: Apr. 5<sup>th</sup>, 2013.

**Abbreviations:**

**ACGIH** - American Conference of Governmental Industrial Hygienists.

**CAS** - Chemical Abstract Service.

**NIOSH** - National Institute for Occupational Safety and Health.

**NIOSH REL** - Recommended Exposure Limit established by NIOSH.

**OSHA** - Occupational Safety and Health Administration.

**OSHA PEL** - Permissible Exposure Limit established by OSHA.

**PPE** - Personal protective equipment.

**PVC** - Polyvinyl chloride.

**TWA** - Time weighted average.