

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

### 1.1. Product identifier

Product form : Substance  
Trade name : C5 Stream

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

Use of the substance/mixture : Extraction of isoprene  
Piperilynes  
DCPD  
Gasoline blendstock

### 1.3. Details of the supplier of the safety data sheet

US Distributer:  
Braskem S.A.  
5100 Westheimer Rd - Suite 495  
Houston, 77056 - USA

Manufacturer:  
Braskem S.A.  
Rua Eteno, 1561, Polo Petroquímico de Camaçari  
Camaçari, BA, CEP: 42810-000, 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  
Acute Tox. 4 (Oral) H302  
Skin Irrit. 2 H315  
Muta. 2 H341  
Carc. 2 H351  
Asp. Tox. 1 H304

Full text of H statements: see section 16

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H225 - Highly flammable liquid and vapor  
H302 - Harmful if swallowed  
H304 - May be fatal if swallowed and enters airways  
H315 - Causes skin irritation  
H341 - Suspected of causing genetic defects  
H351 - Suspected of causing cancer

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking  
P233 - Keep container tightly closed  
P240 - Ground/bond container and receiving equipment  
P241 - Use explosion-proof ventilating, lighting, electrical equipment  
P242 - Use only non-sparking tools  
P243 - Take precautionary measures against static discharge  
P264 - Wash hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product

P280 - Wear eye protection, protective clothing, protective gloves  
 P301+P310 - If swallowed: Immediately call a POISON CENTER  
 P301+P312 - If swallowed: Call a POISON CENTER if you feel unwell  
 P302+P352 - If on skin: Wash with plenty of water  
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
 P308+P313 - If exposed or concerned: Get medical advice/attention  
 P330 - Rinse mouth  
 P331 - Do NOT induce vomiting  
 P332+P313 - If skin irritation occurs: Get medical advice/attention  
 P362+P364 - Take off contaminated clothing and wash it before reuse  
 P370+P378 - In case of fire: Use alcohol resistant foam, dry extinguishing powder 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

other hazards which do not result in classification : Spills of this product present a serious slipping hazard.

## 2.4. Unknown acute toxicity (GHS US)

Not applicable.

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Substance type : UVCB  
 Name : C5 stream  
 Synonymous : C5 Refined

Name	Product identifier	%
1-Pentene	(CAS No) 109-67-1	≈ 8,39
2-Methyl-1-butene	(CAS No) 563-46-2	≈ 8,39
2-Methyl-2-butene	(CAS No) 513-35-9	≈ 8,39
3-Methyl-1-butene	(CAS No) 563-45-1	≈ 8,39
Cyclopentadiene	(CAS No) 542-92-7	6 – 7,5
Cyclopentene	(CAS No) 142-29-0	≈ 3,18
Cyclopentane	(CAS No) 287-92-3	≈ 2,27
1,4-Pentadiene	(CAS No) 591-93-5	≈ 1,81
2-Methylpentane	(CAS No) 107-83-5	≈ 1,25
1-Hexene	(CAS No) 592-41-6	≈ 1,25
benzene	(CAS No) 71-43-2	0,01

Full text of H-statements: see section 16

### 3.2. Mixture

Not applicable

### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).  
 First-aid measures after inhalation : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. If breathing stops, give artificial respiration. Get medical advice/attention. If breathing is difficult, give oxygen.  
 First-aid measures after skin contact : Immediately flush skin with plenty of water for at least 15 minutes. If skin irritation persists, seek medical attention. Remove/take off immediately all contaminated clothing.  
 First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention immediately.  
 First-aid measures after ingestion : Do NOT induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Rinse mouth. Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER or doctor/physician.

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

Symptoms/injuries : Suspected of causing cancer. Suspected of causing genetic defects.

Symptoms/injuries after inhalation	: Overexposure to vapors may result in cough. Aspiration of this material may cause chemical pneumonia.
Symptoms/injuries after skin contact	: May be harmful in contact with skin. Causes skin irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/injuries after eye contact	: May cause delayed painful eye irritation and tearing. Redness.
Symptoms/injuries after ingestion	: Harmful if swallowed. May be fatal if swallowed and enters airways. Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis.

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

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

#### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: Highly flammable liquid and vapor. Heavier than air, vapors may travel long distances along ground, ignite and flash back to source. Incomplete combustion releases dangerous carbon monoxide, carbon dioxide and other toxic gases.
Explosion hazard	: May form flammable/explosive vapor-air mixture. Heavier than air, vapors may travel long distances along ground, ignite and flash back to source. Risk of explosion if heated in a confined system.
Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.

#### 5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protective equipment for firefighters	: Do not enter fire area without proper protective equipment, including respiratory protection. If excessive exposure exists, use only approved air-purifying or supplied air respirator operated in a positive pressure mode.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Spills of this product present a serious slipping hazard. Stop leak if safe to do so. Use special care to avoid static electric charges. No open flames. No smoking. Closed containers may generate internal gas pressure. Eliminate all ignition sources if safe to do so. Pressure rise and possible bursting of container.
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##### 6.1.1. For non-emergency personnel

Protective equipment	: Use personal protective equipment as required.
Emergency procedures	: Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection. Avoid breathing dust, mist or spray.
Emergency procedures	: Ventilate area.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

For containment	: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Use foam on spills to minimize vapors.
Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Use only antistatically equipped (spark-free) tools. Store away from other materials. Dispose in a safe manner in accordance with local/national regulations. Ensure all national/local regulations are observed.

#### 6.4. Reference to other sections

For further information refer to section 8: Exposure-controls/personal protection. For disposal of residues refer to section 13: Disposal considerations.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed	: Handle empty containers with care because residual vapors are flammable.
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- Precautions for safe handling** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Use personal protective equipment as required. Use only outdoors or in a well-ventilated area. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
- Hygiene measures** : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Contaminated work clothing should not be allowed out of the workplace. Separate working clothes from town clothes. Launder separately.

## 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures** : Ground/bond container and receiving equipment. A washing facility/water for eye and skin cleaning purposes should be present. Ensure adequate ventilation. Use explosion-proof electrical, lighting, ventilating equipment.
- Storage conditions** : Keep only in the original container in a cool well ventilated place. Keep in fireproof place. Keep container tightly closed. Avoid stacking.
- Incompatible materials** : Strong acids. Strong oxidizing agents. Strong reducing agents.

## 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

2-Methylpentane (107-83-5)		
ACGIH	ACGIH TWA (ppm)	500 ppm
ACGIH	ACGIH STEL (ppm)	1000 ppm

Cyclopentane (287-92-3)		
ACGIH	ACGIH TWA (ppm)	600 ppm
ACGIH	Remark (ACGIH)	URT, eye, & skin irr; CNS impair

Cyclopentadiene (542-92-7)		
ACGIH	ACGIH TWA (ppm)	75 ppm
ACGIH	Remark (ACGIH)	URT & eye irr
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	200 mg/m <sup>3</sup>
OSHA	OSHA PEL (TWA) (ppm)	75 ppm

1-Hexene (592-41-6)		
ACGIH	ACGIH TWA (ppm)	50 ppm

benzene (71-43-2)		
ACGIH	ACGIH TWA (ppm)	0.50 ppm
ACGIH	ACGIH STEL (ppm)	2.5 ppm
ACGIH	Remark (ACGIH)	Leukemia

### 8.2. Exposure controls

- Appropriate engineering controls** : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation. Provide local exhaust or general room ventilation. Appropriate engineering controls. Use explosion-proof equipment.
- Hand protection** : Impermeable protective gloves. 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** : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Approved organic vapor respirator.
- Consumer exposure controls** : Contact lenses should not be worn.

Other information : Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Colorless
Odor	: Hydrocarbons characteristic
Odor threshold	: No data available
pH	: Not applicable
Relative evaporation rate (butyl acetate=1)	: Not available
Melting point	: No data available
Freezing point	: < 0 °C
Boiling point	: 59,1 to 120,77 °C
Flash point	: -29 to -28 °C
Auto-ignition temperature	: 427 °C (estimated value)
Decomposition temperature	: Not available
Flammability (solid, gas)	: Flammable
Vapor pressure	: 97,4 kPa (14,12 psi)
Relative vapor density at 20 °C	: Not available
Relative density	: No data available
Density	: 0,6985 g/cm <sup>3</sup> @ 25°C
Solubility	: Water: Insoluble Ethanol: Soluble in ethanol Ether: Soluble in ether Acetone: Soluble in acetone
Log Pow	: 2,42 (estimated value)
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 0,236 cP @ 25°C
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: 1,5 – 8,9 vol % (estimated value)

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Extremely flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

### 10.3. Possibility of hazardous reactions

Polymerization can occur. Hazardous polymerization may occur if exposed to high temperature.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Sparks. Heat. Overheating. Open flame.

### 10.5. Incompatible materials

Strong acids. Strong oxidizing agents. Strong reducing agents.

### 10.6. Hazardous decomposition products

Thermal decomposition can lead to the escape of irritating gases and vapors. May release flammable gases. On heating/burning: release of (highly) toxic gases/vapors e.g.: carbon monoxide - carbon dioxide. Fume. Aldehydes. Ketone. Hydrocarbon substances with low molecular weight and their oxidation products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

<b>Cyclopentane (287-92-3)</b>	
LD50 oral rat	11400 mg/kg
<b>Cyclopentene (142-29-0)</b>	
LD50 oral rat	1656 mg/kg
LD50 dermal rabbit	1231 mg/kg
<b>Cyclopentadiene (542-92-7)</b>	
LD50 oral rat	113 mg/kg
LD50 dermal rabbit	430 mg/kg
LC50 inhalation rat (mg/l)	39 mg/l (Exposure time: 1 h)
<b>1-Hexene (592-41-6)</b>	
LD50 oral rat	> 5600 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (ppm)	32000 ppm/4h
<b>2-Methyl-2-butene (513-35-9)</b>	
LD50 oral rat	700 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (ppm)	> 61000 ppm/4h
<b>benzene (71-43-2)</b>	
LD50 oral rat	810 mg/kg
LD50 dermal rabbit	> 8200 mg/kg
LC50 inhalation rat (mg/l)	44.66 mg/l/4h

Skin corrosion/irritation	: Causes skin irritation. pH: Not applicable
Serious eye damage/irritation	: Not classified pH: Not applicable
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Suspected of causing genetic defects.
Carcinogenicity	: Suspected of causing cancer.

<b>benzene (71-43-2)</b>	
IARC group	1 - Carcinogenic to humans
National Toxicology Program (NTP) Status	2 - Known Human Carcinogens

Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: May be fatal if swallowed and enters airways.
Potential Adverse human health effects and symptoms	: Harmful if swallowed. Harmful in contact with skin.
Symptoms/injuries after inhalation	: Overexposure to vapors may result in cough. Aspiration of this material may cause chemical pneumonia.
Symptoms/injuries after skin contact	: May be harmful in contact with skin. Causes skin irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/injuries after eye contact	: May cause delayed painful eye irritation and tearing. Redness.
Symptoms/injuries after ingestion	: Harmful if swallowed. May be fatal if swallowed and enters airways. Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: Harmful to aquatic life with long lasting effects.
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<b>Cyclopentane (287-92-3)</b>	
EC50 Daphnia 1	10.5 mg/l (Exposure time: 48 h - Species: Daphnia magna)

1-Hexene (592-41-6)	
LC50 fish 1	5.6 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static])
EC50 Daphnia 1	230 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 Daphnia 2	30 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

2-Methyl-2-butene (513-35-9)	
EC50 Daphnia 1	3 mg/l (Exposure time: 48 h - Species: Daphnia magna)

benzene (71-43-2)	
LC50 fish 1	10.7 - 14.7 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	8.76 - 15.6 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	5.3 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
EC50 Daphnia 2	10 mg/l (Exposure time: 48 h - Species: Daphnia magna)

## 12.2. Persistence and degradability

benzene (71-43-2)	
Persistence and degradability	Readily biodegradable. Not persistent.

## 12.3. Bioaccumulative potential

Crude C5	
Log Pow	2.42 (estimated value)

Cyclopentane (287-92-3)	
Log Pow	2.05

1-Hexene (592-41-6)	
Log Pow	3.39 (at 20 °C)

2-Methyl-2-butene (513-35-9)	
BCF fish 1	(low potential to bioaccumulate)

benzene (71-43-2)	
BCF fish 1	3.5 - 4.4
Bioconcentration factor (BCF REACH)	> 2000
Log Pow	1.83
Bioaccumulative potential	Not bioaccumulable.

## 12.4. Mobility in soil

No additional information available

## 12.5. Other adverse effects

Effect on ozone layer : No additional information available  
 Effect on the global warming : No additional information available  
 Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Consult the appropriate authorities about waste disposal. Can be deposited in landfills, sent to an incineration or other appropriate means of disposal provided they meet the requirements of local laws. Ensure all national/local regulations are observed.

Additional information : Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

## SECTION 14: Transport information

### Classification for LAND transport: DOT

UN Number : UN3295  
 Proper Shipping Name : Hydrocarbons, liquid, n.o.s. (Cyclopentadiene)  
 Class / Division : 3  
 Packing Group : II  
 Reportable quantity : Not applicable

### Classification for SEA transport: IMO - IMDG

UN Number : UN3295

Proper Shipping Name	: HYDROCARBONS, LIQUID, N.O.S. (Cyclopentadiene)
Class / Division	: 3
Packing group	: II
Marine pollutant	: Product not considered marine pollutant based on available data
Transport in bulk according to Annex I or II of MARPOL 73/78 and IBC or IGC Code:	
Product name	: Consult IMO guidelines before transporting in bulk

### Classification for AIR transport: IATA - ICAO

UN Number	: UN3295
Proper Shipping Name	: Hydrocarbons, liquid, n.o.s. (Cyclopentadiene)
Class / Division	: 3
Packing group	: II

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 US DOT, IMDG and IATA regulations before transporting the product. The transportation 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

<b>1,4-Pentadiene (591-93-5)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>2-Methylpentane (107-83-5)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Cyclopentane (287-92-3)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Cyclopentene (142-29-0)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Cyclopentadiene (542-92-7)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	S - S - indicates a substance that is identified in a proposed or final Significant New Uses Rule
<b>1-Hexene (592-41-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>1-Pentene (109-67-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>2-Methyl-1-butene (563-46-2)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>2-Methyl-2-butene (513-35-9)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>3-Methyl-1-butene (563-45-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>benzene (71-43-2)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	0.1 %

### 15.2. International regulations

#### CANADA

<b>1,4-Pentadiene (591-93-5)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>2-Methylpentane (107-83-5)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 2 - Flammable Liquid



<b>Cyclopentane (287-92-3)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 2 - Flammable Liquid
<b>Cyclopentene (142-29-0)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision B - Toxic material causing other toxic effects
<b>Cyclopentadiene (542-92-7)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class F - Dangerously Reactive Material
<b>1-Hexene (592-41-6)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>1-Pentene (109-67-1)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>2-Methyl-1-butene (563-46-2)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>2-Methyl-2-butene (513-35-9)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>3-Methyl-1-butene (563-45-1)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>benzene (71-43-2)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class D Division 2 Subdivision B - Toxic material causing other toxic effects

## EU-Regulations

<b>1,4-Pentadiene (591-93-5)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>2-Methylpentane (107-83-5)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Cyclopentane (287-92-3)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Cyclopentene (142-29-0)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>Cyclopentadiene (542-92-7)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>1-Hexene (592-41-6)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>1-Pentene (109-67-1)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>2-Methyl-1-butene (563-46-2)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>2-Methyl-2-butene (513-35-9)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>3-Methyl-1-butene (563-45-1)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
<b>benzene (71-43-2)</b>	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	

## 15.2.2. National regulations

## 1,4-Pentadiene (591-93-5)

Listed on the AICS (Australian Inventory of Chemical Substances)  
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
 Listed on the Korean ECL (Existing Chemicals List)  
 Listed on INSQ (Mexican national Inventory of Chemical Substances)

## 2-Methylpentane (107-83-5)

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)  
 Listed on the Canadian IDL (Ingredient Disclosure List)  
 Listed on INSQ (Mexican national Inventory of Chemical Substances)  
 Listed on CICR (Turkish Inventory and Control of Chemicals)

## Cyclopentane (287-92-3)

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 Japanese ISHL (Industrial Safety and Health Law)  
 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)  
 Listed on the Canadian IDL (Ingredient Disclosure List)  
 Listed on INSQ (Mexican national Inventory of Chemical Substances)  
 Listed on CICR (Turkish Inventory and Control of Chemicals)

## Cyclopentene (142-29-0)

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)  
 Listed on INSQ (Mexican national Inventory of Chemical Substances)

## Cyclopentadiene (542-92-7)

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 Japanese ISHL (Industrial Safety and Health Law)  
 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)  
 Listed on the Canadian IDL (Ingredient Disclosure List)  
 Listed on INSQ (Mexican national Inventory of Chemical Substances)

## 1-Hexene (592-41-6)

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)  
 Listed on INSQ (Mexican national Inventory of Chemical Substances)

## 1-Pentene (109-67-1)

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)  
 Listed on INSQ (Mexican national Inventory of Chemical Substances)

## 2-Methyl-1-butene (563-46-2)

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)  
 Listed on INSQ (Mexican national Inventory of Chemical Substances)

## 2-Methyl-2-butene (513-35-9)

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 Japanese ISHL (Industrial Safety and Health Law)  
 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)  
 Listed on INSQ (Mexican national Inventory of Chemical Substances)

## 3-Methyl-1-butene (563-45-1)

Listed on the AICS (Australian Inventory of Chemical Substances)  
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
 Listed on the Korean ECL (Existing Chemicals List)  
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
 Listed on INSQ (Mexican national Inventory of Chemical Substances)

## benzene (71-43-2)

Listed on IARC (International Agency for Research on Cancer)  
 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)  
 Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
 Listed as carcinogen on NTP (National Toxicology Program)  
 Listed on the Canadian IDL (Ingredient Disclosure List)  
 Listed on INSQ (Mexican national Inventory of Chemical Substances)  
 Listed on CICR (Turkish Inventory and Control of Chemicals)

### 15.3. US State regulations

#### benzene (71-43-2)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
Yes	Yes	No	Yes	6.4 µg/day

### SECTION 16: Other information

Sources of Key data : Data arise from reference works and literature.  
 Abbreviations and acronyms : ACGIH - American Conference of Government Industrial Hygienists  
 CNS impair - central nervous system impairment  
 IARC - International Agency for Research on Cancer  
 OSHA - Occupational Safety and Health Administration  
 PEL - Permissible Exposure Level  
 STEL - Short-Term Exposure Limit  
 TWA - Time Weighted Average  
 URT - upper respiratory track



## Safety Data Sheet

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

Product: C5 Stream

Revision date: 13/Sep/2017 Version: 3.2

### Full text of H-statements:

-----	H224	Extremely flammable liquid and vapor
-----	H225	Highly flammable liquid and vapor
-----	H226	Flammable liquid and vapor
-----	H301	Toxic if swallowed
-----	H302	Harmful if swallowed
-----	H304	May be fatal if swallowed and enters airways
-----	H311	Toxic in contact with skin
-----	H312	Harmful in contact with skin
-----	H315	Causes skin irritation
-----	H319	Causes serious eye irritation
-----	H335	May cause respiratory irritation
-----	H336	May cause drowsiness or dizziness
-----	H340	May cause genetic defects
-----	H341	Suspected of causing genetic defects
-----	H350	May cause cancer
-----	H351	Suspected of causing cancer
-----	H372	Causes damage to organs through prolonged or repeated exposure

### 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.*