



**SAFETY DATA SHEET**  
**PETROLEUM BENZENE**

Date of issue: 13.07.2004

revision: 01.08.2011 – 8<sup>th</sup> issue  
replaces: 01.12.2010 – 7<sup>th</sup> issue

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

1.1 Product identifier

The table contains identifiers (names and identification numbers) of the product which is marketed under the following business name:

**PETROLEUM BENZENE**

DATA SOURCE FOR IDENTIFICATION	IDENTIFIERS	
	NAME OF SUBSTANCE	IDENTIFICATION NO.
Registration in accordance with REACH Regulation	<b>Name on registration:</b> Benzene	<b>registration no.:</b> 01-2119447106-44-0029
List of harmonized classifications (Annex VI of CLP)	<b>Name in the list:</b> Benzen Benzene	<b>index no.:</b> 601-020-00-8
ECHA database of classifications and labels	<b>Name listed in the database:</b> database not yet available	<b>identification no.:</b> database not yet available
Other sources	<b>International chemical name:</b> Benzene	<b>CAS:</b> 71-43-2 <b>EC:</b> 200-753-7

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

2.1.1 Identified use

Intermediate product for the production of chemical elements used during its whole life cycle under strictly controlled conditions defined in article 18(4) of Regulation (EC) No 1907/2006 REACH – see Section 16.

2.1.2 Non-recommended use

Substance was registered as a transported isolated intermediate product used during its whole life cycle under strictly controlled conditions defined in article 18(4) of regulation (EC) no. 1907/2006 REACH – see Section 16, and as such no other form of manipulation is allowed.

1.3 Details of the supplier of the safety data sheet

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1.4 Emergency telephone number

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- MINISTRY OF HEALTH CENTRE

Toxicological Information Center (TIC)

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fax: +420 224 914 570

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**SECTION 2: HAZARDS IDENTIFICATION**
**2.1 Classification of the substance or mixture**

The product is harmonically classified on the EU level as dangerous based on its entry, classification and labelling in part 3 of Annex VI of Regulation (EC) No 1272/2008 CLP.

**2.1.1 CLP (Regulation (EC) No1272/2008 CLP) :**

FLAMMABLE LIQUID (CATEGORY 2)  
 CARCINOGENIC (CATEGORY 1A)  
 MUTAGENIC (CATEGORY 1B)  
 TOXIC FOR SPECIFIC TARGET ORGANS - REPEATED EXPOSURE (CATEGORY 1)  
 ASPIRATION HAZARD (CATEGORY 1)  
 SEVERE DANGER OF EYE DAMAGE / IRRITATION (CATEGORY 2)

<b>Flam. Liq. 2, H 225</b>
<b>Carc. 1A, H 350</b>
<b>Muta. 1B, H 340</b>
<b>STOT RE 1, H 372</b>
<b>Asp. Tox. 1, H 304</b>
<b>Eye Irrit. 2, H 319</b>




**2.1.2 DSD / DPD (directive) 67/548/EHS / directive 1999/45/ES) :**

HIGHLY FLAMMABLE  
 CARCINOGENIC CAT. 1  
 MUTAGENIC CAT. 2  
 TOXIC  
 DANGEROUS TO HEALTH  
 IRRITATING

<b>F; R 11</b>
<b>Carc.Cat. 1; R 45</b>
<b>Mut.Cat. 2; R 46</b>
<b>T; R 48/23/24/25</b>
<b>Xn; R 65</b>
<b>Xi; R 36/38</b>

*Note: Full wording of H-, EUH- and R-phrases listed in Section 16*

**2.2 Label elements**

<i>product identifiers</i>	<b>PETROLEUM BENZENE</b> BENZEN / BENZENE index no.: 601-020-00-8
<i>hazard pictogram(s)</i>	   GHS02                      GHS08                      GHS07
<i>signal word</i>	<b>DANGER</b>
<i>hazard statements (H-, EUR-phrases)</i>	H225 Highly flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H319 Causes serious eye irritation. H340 May cause genetic defects. H350 May cause cancer. H372 Causes damage to organs through prolonged or repeated exposure.
<i>precautionary statements (P-phrases)</i>	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. P243 Take precautionary measures against static discharge. P280 Wear protective gloves/protective clothing/eye protection/face protection. P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P331 DO NOT INDUCE vomiting.



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additional information

Only for professional users.

UNIPETROL RPA, s.r.o.  
Záluží 1, 436 70 Litvínov, Czech Republic  
☎: +420 476 161 111, +420 476 162 111, +420 476 163 111

### 2.3 Other hazards

The liquid quickly evaporates, its vapours are highly flammable and form an explosive mixture with air. The vapours are heavier than air, and so they amass and spread near the ground, and in case of a random leak may initiate a fire or explosion even far from the source. The product is practically non-soluble in water, stays on the surface and so may form an explosive mixture with air above the water surface. The danger of explosion and subsequent fire is thus also present in case of a leak into the sewage system.

The product is hazardous if inhaled. This means that in case of consumption and subsequent vomiting, there is a risk of aspiration (entering the lungs) and a risk of chemical pneumonia (lung swelling), which may lead to death. The product is additionally classified as carcinogenic and mutagenic. Chronic exposure can lead to damage to the bone marrow, blood production disorders and leukaemia. The disease can develop even years after the last exposure.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

name of substance :	benzene	
concentration [% of weight] :	min. 99,9	
index no. (index) :	601-020-00-8	
CAS :	71-43-2	
ES :	200-753-7	
CONTAMINANTS	NEME:	IDENTIFIER:
<i>the product does not contain any impurities, stabilizing additives or other substances which would affect its classification</i>		

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

#### 4.1.1 General instructions

Ensure the operation of vital functions. In case of danger of loss of consciousness, move the patient into the stabilized position. Never give anything orally to unconscious individuals.

If possible with respect to your own safety, transport the patient out of the dangerous area and remove all contaminated clothing and shoes.

Ensure specialized medical help.

#### 4.1.2 In case of inhalation

Transport the patient to fresh air, do not let them get cold and ensure specialized medical help.

#### 4.1.3 In case of skin contact

Remove contaminated clothing and shoes. Thoroughly wash the affected areas with water (ideally tepid) and with soap, and keep rinsing for at least 15 minutes. Ensure specialized medical help.

#### 4.1.4 In case of eye contact

Immediately start washing eyes while wide open under flowing tepid water, continue for at least 15 minutes. If the patient has contact lenses, remove them before washing eyes. Ensure specialized medical help.

#### 4.1.5 In case if swallowed

If the patient is not unconscious, wash their mouth with water, but **DO NOT INDUCE VOMITING!** If the patient is vomiting on their own, keep their head below their hips so that they do not inhale their vomit. Ensure specialized medical help as soon as possible.

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

Based on the exposure dosage, the substance can cause headache, nausea, sleepiness, dizziness, irritation of airways together with coughing or even problems breathing up to complete loss of breath, spasms and unconsciousness. In case of consumption may cause spontaneous vomiting with a risk of the substance entering the lungs (aspiration) and lung swelling (chemical pneumonia), which may lead to death. Direct contact with eyes or skin may lead to irritation. Prolonged exposure of the skin to the substance may lead to ungreasing and crackles.

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

Immediate medical help is necessary in case of consumption or if the substance enters the lungs.

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### SECTION 5: FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

Appropriate extinguishing media: low expansion foam, spray or water fog.

Inappropriate extinguishing media: direct water stream.

Extinguishing small fire: dry-powder or carbon dioxide (CO<sub>2</sub>) extinguisher, dry sand or extinguishing foam.

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

The vapours are heavier than air, and so they amass and spread near the ground, and in case of a random leak may initiate a fire or explosion even far from the source. This danger is imminent especially in places below the ground or in enclosed places. Toxic or irritating fuels containing monoxide, carbon dioxide or unburned hydrocarbon might be produced during burning.

#### 5.3 Advice for fire fighters

Minimize the penetration of extinguishing medium contaminated by the substance into the sewage, surface or underground waters or into the soil. There is a danger of explosion and subsequent fire in case of a leak into the sewage.

Use water spray to keep the containers cool in order to prevent an explosion caused by the heat.

Do not use foam and water at the same time because water dissolves the foam.

Protective equipment for fire fighters: full protective gear and self-contained close-circuit breathing apparatus.

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### SECTION 6: ACCIDENTAL RELEASE MEASURES

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

Enclose the place and prevent the access to the area in danger. Remain on the windward side. There is a danger of fire in case of accidental release of this substance, therefore remove all possible ignition sources, do not smoke and do not manipulate with open fire. If possible, ensure a sufficient ventilation of enclosed spaces. Prevent contact with the substance and its vapours. Use proper personal protective equipment (as indicated in Subsection 8.2) when removing the effects of the emergency event/accident. Evacuate people from the whole area in danger for large accidents. There is a danger of vapours explosion in case of substance initiation in places below the ground or in enclosed places (including sewage).

## 6.2 Environment precautions

Prevent further leaking and enclose the leaking place. Prevent leakage of the substance into the sewage, surface and underground waters by covering sewage inlets. Inform the relevant authorities if rivers, lakes or sewage systems have been contaminated during the leak.

## 6.3 Methods and material for containment and cleaning up

Safely drain the leaked substance. There is a danger of fire during a leak; therefore only explosion-proof luminaries and electrical equipment and non-sparking tools must be used. Absorb the remains into an appropriate non-flammable porous/absorbent material (e.g. sand, dirt, siliceous earth, vermiculite) and transport for disposal in sealed containers. Dispose in compliance with valid legal regulation for wastes (see Subsection 13). Use water spray to reduce vapours in the air.

For large leaks into water use floating barrage and collect the substance from surface using surface skimmers (separators) or cover the leaked substance with sorbent and remove saturated sorbent from the surface by scraping or draining. Consult a professional before using dispersing agents.

## 6.4 Reference to other sections

For recommended personal protective equipment see Subsection 8.2 („Limiting exposure“).

For recommended waste disposal see Section 13 („Disposal considerations“).

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## SECTION 7: HANDLING AND STORAGE

### 7.1 Safe handling instructions

The product is produced and must be used during its whole life cycle under strictly controlled conditions defined in Regulation (EC) No 1907/2006 REACH. All these conditions must be kept in order to ensure safe handling and to prevent the exposure of people and the environment, with the exception of accidents and emergency events.

General safety and hygienic measures: Use only in sufficiently aired places that do not contain any ignition sources, take all necessary measures to prevent static energy discharges. Do not use compressed air for emptying, filling or any other handling. Please bear in mind that even empty containers can contain remains of flammable vapors; therefore do not perform activities such as welding, cutting or grinding near these containers.

Please keep the rules of personal hygiene. Take off contaminated pieces of clothing. Do not eat, drink or smoke during work! Wash your hands and exposed parts of body thoroughly with soap and water after work and before meal and possibly treat with suitable reparation lotion. Do not wear contaminated clothing, shoes or protective equipment in the catering area.

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

The product is produced and must be used during its whole life cycle under strictly controlled conditions defined in Regulation (EC) No 1907/2006 REACH. All these conditions must be kept in order to ensure safe storing and to prevent the exposure of people and the environment, with the exception of accidents and emergency events. Storage containers must be closed, properly labeled and grounded. Recommended material suitable for containers is soft or stainless steel. Do not store near incompatible materials, such as oxidizers. We recommend keeping the liquid under inert gas.

### 7.3 Specific end use(s)

The substance is registered as a transported isolated intermediate product produced and used under strictly controlled conditions defined in Article 18(4) of Regulation (EC) No 1907/2006 REACH (see Section 16), and therefore must be handled as such. Instructions including a proposal for mapping and documenting strictly controlled conditions on workplace are available at the following webpage:  
<http://cefic.org/Files/Publications/demonstrating-SCC-Update-June-2010-final.pdf>.

In case of accidental release the handling and storage place and methods of handling the substance must correspond to working with flammable substances with a potential to damaging waters and soils.

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## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters

Czech Republic (government Regulation No361/2007 Coll.)	PEL [mg.m <sup>-3</sup> ]	NPK-P [mg.m <sup>-3</sup> ]
name : benzene	3	10
index no. : 601-020-00-8		
CAS : 71-43-2		
ES : 200-753-7		

PEL : permissible exposure limit of the chemical substance in the air

NPK-P : maximum permissible concentration of the chemical substance in the air

	8-hour limit [mg.m <sup>-3</sup> ]	short time limit [mg.m <sup>-3</sup> ]
European Union (Directive) 2000/39/ES)	3,25	not determined
Germany	3,25	not determined
Italy	3,25	not determined
Slovakia	not determined	not determined
Poland	1,6	not determined

8-hour limit: measured or calculated in relation to the reference period of eight hours as a time-weighted average

short time limit: limit value that should not be exceeded during exposure corresponding to 15 minutes

Recommended procedure for monitoring concentrations in the work environment: gas chromatography (GC) with a flame ionizing detector (FID) or a mass spectrometer (MS) in accordance with technical norms ČSN EN 689 and ČSN EN 482.

### 8.2 Exposure controls

Technical protective measures to prevent exposure of people and the environment

The product is produced and must be used during its whole life cycle under strictly controlled conditions defined in Regulation (EC) No 1907/2006 REACH (see Section 16). Protective measures against exposure must be ensured by strictly keeping the substance under control by using process and control technologies, which reduce emissions and subsequent exposure with the goal of preventing the substance from entering the air and water systems as well as the soil, and of preventing possible human exposure. The areas where the substance is stored and manipulated must be equipped with impermeable floors and retaining tanks in case of emergency leaks.

Individual protective measures

If an accident or extraordinary event causes increased exposure, employees must have access to personal protective measures (PPM) for the protection of airways, eyes, hands and skin, depending on the nature of the performed activities. Suitable protection for airways must also be available where it is not technically possible to ensure the adherence of exposition limits identified for the work environment or ensure that exposure via airways will not affect the health of people. During non-stop use of these measures during permanent work, it is necessary to include safety breaks if the nature of the PPM requires them. All PPM need to be kept in usable condition and damaged or contaminated ones need to be immediately replaced.

RECOMMENDED PERSONAL PROTECTIVE MEASURES (PPM):

- *protection of airways:* protective mask with filter A (brown, against organic gases) for leaks, isolation breathing device for removing the consequences of extraordinary events
- *protection of eye / face:* protective glasses
- *protection of skin - hands* protective gloves

	<i>glove material</i>	<i>layer width</i>	<i>time of penetration</i>
general work activity (possibility of contamination)	nitril	0,4 mm	10 minutes
cleaning after leaks / emergencies	Viton	0,7 mm	480 minutes

- *protection of other body parts:* antistatic non-flammable protective clothing, antistatic shoes
- *heat danger:* not relevant for the identified manner of use

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

PROPERTY	UNIT	VALUE	NOTE
appearance		colorless liquid	
odour		aromatic	
odour threshold	[ppm]	4,68	HSDB
pH value		not relevant	
melting / freezing point	[°C]	5,5	
initial boiling point / boiling range	[°C]	80	
flash point	[°C]	-11	
evaporation rate	ether=1	2,8	HSDB
flammability		determining flammability not relevant for liquids	
upper explosion limit	[% vol]	7,8	HSDB
lower explosion limit	[% vol]	1,2	HSDB
vapour pressure	[hPa]	10 100	at 20°C at 79,7°C
vapour density	air=1	2,8	HSDB
relative density	[g.cm <sup>-3</sup> ]	0,8765	at 15,6°C
solubility	[g.l <sup>-1</sup> ]	1,88	at 23,5°C
partition coefficient: n-octanol/water	[log Kow]	2,13	
auto-ignition temperature	[°C]	498	
decomposition temperature		does not decomposition down at usual temperatures of use	
kinematic viscosity	[mm <sup>2</sup> .s <sup>-1</sup> ]	≤ 20,5	at 40°C
dynamic viscosity	[mPa.s]	0,604	at 25°C HSDB
explosive properties		substance is not explosive	
oxidising properties		substance has not oxidising properties	

### 9.2 Other information

Not required.

**SECTION 10: STABILITY AND REACTIVITY**
**10.1 Reactivity**

No threat of dangerous reactions during the identified use as an intermediate product and during storage and manipulation under strictly controlled conditions.

**10.2 Chemical stability**

Chemically stable when used as identified intermediate product and when stored and handled in accordance with strictly controlled conditions at usual temperatures.

**10.3 Possibility of hazardous reactions**

No danger of chemical reaction when used as identified intermediate product and when stored and handled in accordance with strictly controlled conditions at usual temperatures.

**10.4 Conditions to avoid**

Ignition sources (including static energy), high temperature, sunshine.

**10.5 Incompatible materials**

Oxidizers.

**10.6 Hazardous decomposition products**

Carbon monoxide and carbon dioxide might be produced during heat decomposition at high temperatures.

**SECTION 11: TOXICOLOGICAL INFORMATION**
**11.1 Information on toxicological effects**
**11.1.1 Substance**

HAZARD CLASS	EFFECT ON HEALTH	JUSTIFICATION
Acute toxicity	acute toxicity effect on human health for inhalation, ingestion or skin penetration are evident only from the following concentrations: <i>Acute toxicity</i> <i>LD50 oral: &gt; 2000 mg.kg<sup>-1</sup></i> <i>LD<sub>50</sub> skin: &gt; 5000 mg.kg<sup>-1</sup></i> <i>LC<sub>50</sub> inhalation: &gt; 20 mg.l<sup>-1</sup>/4hod</i>	data from registration documentation
Skin corrosion/irritation	skin irritant  <i>irritant</i> <i>unjustified</i> <i>unjustified</i> <i>irritant</i>	harmonized classification in compliance with Annex VI of Regulation (EC) No 1272/2008 CLP  data from registration documentation: <i>data available for humans and animals</i> <i>examination of acid or alkaline reserve</i> <i>in vitro study</i> <i>in vivo study</i>
Serious eye damage/irritation	eye irritant  <i>irritant</i> <i>unjustified</i> <i>unjustified</i> <i>irritant</i>	harmonized classification in compliance with Annex VI of Regulation (EC) No 1272/2008 CLP  data from registration documentation: <i>data available for humans and animals</i> <i>examination of acid or alkaline reserve</i> <i>in vitro study</i> <i>in vivo study</i>

HAZARD CLASS	EFFECT ON HEALTH	JUSTIFICATION
Respiratory or skin sensitisation	based on available data the substance does not cause allergic reaction and therefore it does not need to be classified as sensitizing  <i>non-sensitizing</i> <i>non-sensitizing</i>	data from registration documentation: <i>data available for humans and animals</i> <i>in vivo study</i>
Germ cell mutagenicity	causes heritable genetic changes  <i>genotoxic</i> <i>genotoxic</i>	harmonized classification in compliance with Annex VI of Regulation (EC) No 1272/2008 CLP  data from registration documentation: <i>in vitro study</i> <i>in vivo study</i>
Carcinogenicity	causes cancer	harmonized classification in compliance with Annex VI of Regulation (EC) No 1272/2008 CLP
Reproductive toxicity	based on available information there is no need to classify the substance for adverse effects on fertility or fetus development	currently there are no available data proving that the substance has the given property
Specific target organ toxicity – single exposure	based on available information there is no need to classify the substance for its capability to damage human organs during a single exposure	currently there are no available data proving that the substance has the given property
Specific target organ toxicity – repeated exposure	damages human organs during repeated exposure  <i>damages bone marrow and</i> <i>erodes red and white blood cells</i>	harmonized classification in compliance with Annex VI of Regulation (EC) No 1272/2008 CLP  data from registration documentation: <i>sub acute and sub chronic toxicity</i>
Aspiration hazard	might damage lungs or cause death in case of consumption and inhalation into airways	harmonized classification in compliance with Annex VI of Regulation (EC) No 1272/2008 CLP  hydrocarbon with kinematic viscosity $\leq 20,5 \text{ mm}^2 \cdot \text{s}^{-1}$ at 40°C

#### 11.1.2 Information on likely routes of exposure

There is no danger of exposure for identified use as an intermediate product and when stored and handled in compliance with strictly controlled conditions. Inhalation and skin contact might be a significant way of exposure during emergency events and accidents.

#### 11.1.3 Symptoms and effects (acute, delayed and chronic after short-time and long-time exposure)

Depending on the exposure dose the substance can cause headache, nausea, drowsiness, dizziness, airways irritation together with cough or difficulties with breathing or even apnea, convulsions and unconsciousness. In case of consumption it may cause spontaneous vomiting with a risk of the substance entering the lungs (aspiration) and lung swelling (chemical pneumonia), which may lead to death. Direct contact with eyes or skin may lead to irritation. Prolonged exposure of the skin to the substance may lead to ungreasing and crackles. The substance can trigger heritable genetic changes and cause or help cause cancer.

#### 11.1.4 Interactive effects

There are no interactions for identified use.

#### 11.1.5 Toxicokinetics

Benzene can easily penetrate unprotected skin and enter into the body. For low doses it is quickly metabolized and eliminated in a form of metabolites in urine. For higher doses of exposure a large part of the absorbed dose of benzene is eliminated in exhaled breath.

#### 11.1.6 Absence of specific data

In accordance with Article 18 (3) of Regulation (EC) No 1907/2006 REACH only information corresponding to Annex VII of this Regulation are stated for transported isolated intermediate products above 100 t/year. Tests included in Annex VIII to X do not need to be stated.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Toxicity

#### AQUATIC TOXICITY:

Short term toxicity testing on invertebrates: EC50, 48 hours: 10 mg.l<sup>-1</sup> (*Daphnia*)

Long term toxicity testing on invertebrates: NOEC, 7 days: 3 mg.l<sup>-1</sup> (*Daphnia*)

Growth inhibition study aquatic plants: EC50, 72 hours: 100 mg.l<sup>-1</sup>

Short term toxicity testing on fish: LC50, 96 hours: 5,3 mg.l<sup>-1</sup>

Long term toxicity testing on fish: NOEC, 32 days: 0,8 mg.l<sup>-1</sup>

Activated sludge respiration inhibition testing: IC50, 24 hours, nitrification: 13 mg.l<sup>-1</sup>

### 12.2 Persistence and degradability

Product is easily biologically degradable.

### 12.3 Bioaccumulative potential

With regards to the fact that the value of the distribution coefficient n-octanol/water (log Kow) is lower than 3, no bioaccumulation of the product is expected.

### 12.4 Mobility in soil

With regards to low value of the distribution coefficient n-octane/water (low Kow < 3) no sorption of the product into sediment or soil is expected.

### 12.5 Results of PBT and vPvB assessment

Isolated intermediate products in accordance with Article 2 (8) of Regulation (EC) No 1907/2006 REACH are not subject to the obligation to test chemical safety and to process a report on chemical safety in the sense of Article 14 of this Regulation, which means that PBT (P-persistent, B-bioaccumulative, T-toxic) and vPvB (vP-very persistent, vB-very bioaccumulative) properties do not need to be tested. Due to easy biological decomposition and the level of expected bioaccumulation it is reasonable to assume that benzene does not meet the criteria for PBT or vPvB substances.

### 12.6 Other adverse effects

The product is considered hazardous harmful substance in the sense of Annex I to Water Act No 254/2001 Coll.

### 12.7 Other information

In accordance with Article 18 (3) of Regulation (EC) No 1907/2006 REACH only information corresponding to Annex VII of this Regulation are stated for transported isolated intermediate products above 100 t/year. Tests included in Annex VIII to X do not need to be stated.

**SECTION 13: DISPOSAL CONSIDERATION**

## 13.1 Waste treatment methods

No waste is produced from designated use and when stored and handled under strictly controlled conditions. If waste is produced during an emergency event or accident, valid European Union and national or local legislature and regulations must be adhered to.

## 13.1.1 Recommended waste classification according to Decree No 381/2001 Coll. (Waste catalogue)

Catalogue number for products that have become waste:

07 01 04\* Other organic solvents, washing liquids and mother liquors.

16 03 05\* Organic waste containing dangerous substances.

Catalogue number for leaked product absorbed into an absorption agent (e.g. vapex):

15 02 02\* Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances.

Catalogue number for soil contaminated by leaked product:

17 05 03\* Soil and stones containing dangerous substances.

## 13.1.2 Recommended methods of waste disposal

Hand the waste for disposal to authorized professionals.

Energy utilization (burning).

Landfill and biodegradation in case of soil contaminated by leaked product.

## 13.1.3 Recommended methods of contaminated containers disposal

Not relevant. Product is not packed, it is transported through piping and railroad cisterns.

## 13.1.4 Considerations for limiting exposure when handling wastes

Do not flush leaked product during an emergency event or accident into sewage. Proceed in accordance with instructions provided in Section 6 („Accidental release measures“) and in Subsection 8.2 („Limiting exposure“) and adhere to all valid legal regulations for the protection of people, air and water.

**SECTION 14: TRANSPORT INFORMATION**

Information on transport classification are in accordance with the following UN Model Regulations:

European Agreement concerning the International Carriage of Dangerous Goods (ADR),

International Carriage of Dangerous Goods by Rail (RID).

- 14.1 UN number: 1114
- 14.2 UN proper shipping name: BENZENE
- 14.3 Transport hazard class(es): 3
- 14.4 Packing group: II
- 14.5 Environmental hazards: the product is not hazardous for the environment in accordance with criteria stated in the UN Model Regulations
- 14.6 Special precautions for user: none
- 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: the product is not intended to be carried in bulk in accordance with the International Maritime Organization (IMO) documents
- 14.8 Other information
- Hazard identification number: 33
- Classification code: F1
- Safety sign: 3

**SECTION 15: REGULATORY INFORMATION**

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

## 15.1.1 European Union

Regulation (EC) No 1907/2006 (REACH) of the European Parliament and of the Council, as amended  
REGISTRATION (TITLE II OF REACH REGULATION)

The product has been registered as transported isolated intermediate product produced and used under strictly controlled conditions.

AUTHORIZATION (TITLE VII OF REACH REGULATION)

Isolated intermediate products are not subject to authorization obligation in accordance with Article 2(8).

RESTRICTION (TITLE VIII OF REACH REGULATION)

Restrictions are met by determining authorized used.

Regulation (EC) No 1272/2008 (CLP) of the European Parliament and of the Council, as amended

The product has been classified in accordance with the abovementioned regulation. Obligations related to packing and labeling the package of hazardous chemical substance do not apply to the product with regards to the fact that it is not packed upon entering the market.

Regulation (EC) No 689/2008 of the European Parliament and of the Council concerning the export and import of dangerous chemicals, as amended

The product is subject to special provision for export and import.

Directive 2006/12/EC of the European Parliament and of the Council on waste, as amended

Implemented into Act No 185/2001 Coll. on waste.

Council Directive No 96/82/EC on the control of major-accident hazards involving dangerous substances, as amended

Implemented into Act No 59/2006 Coll. on the prevention of serious accidents

## 15.1.2 The Czech Republic

Act No 356/2003 Coll. on chemical substances and preparations, as amended

Act No 258/2000 Coll. on protection of public health, as amended

Act No 254/2001 Coll., on waters, as amended

Act No 86/2002 Coll., on the protection of the air, as amended

Act No 185/2001 Coll., on waste, as amended

Decree No 381/2001 Coll., in which the Waste Catalogue is stated, as amended

Government Regulation No 361/2007 Coll., determining conditions for occupational health protection, as amended

Act No 59/2006 Coll., on the prevention of serious accidents, as amended

Decree No 256/2006 Coll., on details of the serious accident prevention system, as amended

## 15.2 Chemical safety assessment

Isolated intermediate products in accordance with Article 2 (8) of Regulation (EC) No 1907/2006 REACH are not subject to the obligation to test chemical safety and to process a report on chemical safety in the sense of Article 14 of this Regulation, and therefore no chemical safety report has been drawn up for this product by the manufacturer.

**SECTION 16: OTHER INFORMATION**

Changes made at revision

26.10.2005: Editing information in chapters 2, 3.1, 3.2, 11.1, 12.5, 15.1, 15.2, 16

01.12.2006: Editing information in chapters 1, 2, 8, 13 a 16

01.03.2007. Editing information in chapters 1a 16

01.06.2007: Complete revision of the document in relation to the Regulation (EC) No 1907/2006 of the European Parliament and of the Council

- 01.12.2009: Editing information in chapters 1, 2.1, 8.1, 15, 16 and „Proclamation”  
01.12.2010: Editing information in chapters 1 (registration no., use under strictly controlled conditions), 2 (classification and labeling according to CLP), 4 and 16  
01.08.2011: Complete revision of the document in relation to the updating of Annex II of Regulation (EC) No 1907/2006 REACH in accordance with Annex I of Commission Regulation (EU) No 453/2010

**Abbreviations used in the text**

CAS number	Registration number assigned to the substance by the Chemical Abstracts Service of the American Chemical Society.
EC number	Official number of the chemical substance in the European Union: EINECS (European Inventory of Existing Commercial Substances), or ELINCS (European List of Notified Chemical Substances), or NLP (No longer polymer list).
REACH (Regulation)	EU Regulation No 1907/2006 on the Registration, Evaluation and Authorization of Chemicals.
CLP (Regulation)	EU Regulation No 1272/2008 on the Classification, Labeling and Packaging of chemical substances and mixtures, which implements the United Nations' Globally Harmonized System into EU legislature.
DSD	EU Directive No 67/548/EHS, the Dangerous Substances Directive.
DPD	EU Directive No 1999/45/ES, the Dangerous Preparations Directive.
ECHA	European Chemicals Agency.
UVCB substances	Substances of Unknown or Variable composition, Complex reaction products or Biological materials.
ČSN EN (ISO)	European norm accepted into the Czech technical norms system.
OSN or UN	The United Nations.
IBC	The Intermediate Bulk Container.
MARPOL 73/78	The International Convention for the Prevention of Pollution from Ships of 1978.
HSDB	Hazardous Substances Data Bank.

**Sources of data used for setting up the safety sheet**

Company records of Unipetrol RPA, s.r.o. on the classification of dangerous properties of products Annexes I, IV, VI and VII to EC Regulation No 1272/2008 CLP, as amended  
Principles for provision of first aid following exposure to chemical substances (doc. MUDr. Daniela Pelclová at al.)  
Registration documentation for the substance in accordance with EC Regulation No 1907/2006 REACH  
Decision of ECHA No SUB-D-2114118349-48-01/F on registration in accordance with EC Regulation No 1907/2006 REACH  
Research data sources (European chemical Substances Information System ESIS, Hazardous Substances Data Bank HSDB, Sicherheitstechnische Kenndaten chemischer Stoffe SORBE, MedisAlarm, University of Akron Chemical UAKRON, Occupational safety and health guideline, National Institute for Occupational Safety and Health NIOSH, Cheminfo of Canadian Centre for Occupational Health and Safety CCOHS, Directive for air quality in Europe (ecologic center in Most), Gestis sanitary limits)

**Full wording of R-phrases, H-phrases and EUH-phrases listed in SECTIONS 2 and/or 3**

R 45	May cause cancer
R 46	May cause heritable genetic damage
R 11	Highly flammable
R 36/38	Irritating to eyes and skin
R 48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
R 65	Harmful: May cause lung damage if swallowed
H 225	Highly flammable liquid and vapor.
H 304	May be fatal if swallowed and enters airways.
H 315	Causes skin irritation.
H 319	Causes serious eye irritation.

- H 340 May cause genetic defects.  
 H 350 May cause cancer.  
 H 372 Causes damage to organs through prolonged or repeated exposure.

**Training guidelines**

Those who manipulate with the product must be demonstrably informed of its dangerous properties, principles of protecting the environment and health from its harmful effects and principles of first aid (Act No 258/2000, as amended).

**Access to information**

According to article 35 of EC Regulation No 1907/2006 Reach, each employer must allow access to information listed in the safety sheet to all workers who use this product or are exposed to its effects during their work, and also to representatives of these workers.



**Strictly controlled conditions**

These are technological processes and working conditions which ensure that, during the whole service life of the intermediate product (i.e. from its production until its transformation to another substance), emissions into the environment and exposure of employees are minimized. For intermediate products isolated on the spot, these conditions are defined in article 18(4) of EC Regulation No 1907/2006 REACH:

- substance is strictly stored under controlled conditions by technical measures during its whole service life,
- process and control technologies are used for reducing emissions and exposure,
- only appropriately trained and entitled staff can manipulate the substance,
- activities such as cleaning and rinsing are performed before opening and entering the technological system during cleaning, maintenance or inspections,
- in case of an accident and when waste is created, process and control technologies are used to reduce emissions and exposure when cleaning the substance or during the cleaning and maintenance procedures,
- procedures for manipulating the substance are appropriately documented and strictly monitored by the operator.

**Elements of the original labeling of dangerous substance in accordance with DSD Directive 67/548/EHS**

**WARNING !!!** Only used informally, to ensure continuity between the former and new labeling of dangerous substances. **THE ELEMENTS LISTED BELOW CAN NO LONGER BE USED TO LABEL THIS PRODUCT !!!** The new labeling must be in accordance with Subsection 2.2.

<i>graphic symbol of danger</i>		
<i>written symbol of danger</i>	<b>F</b>	<b>T</b>
<i>R-phrases</i>	R 45 May cause cancer R 46 May cause heritable genetic damage R 11 Highly flammable R 36/38 Irritating to eyes and skin R 48/23/24/25 Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed R 65 Harmful: May cause lung damage if swallowed	
<i>S-phrases</i>	S 53 Avoid exposure - obtain special instructions before use S 45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)	



***SAFETY DATA SHEET***  
**PETROLEUM BENZENE**

Date of issue: 13.07.2004

revision: 01.08.2011 – 8<sup>th</sup> issue

replaces: 01.12.2010 – 7<sup>th</sup> issue

**Inspection and verification of safety sheet contents**

Inspection and verification of the accordance of this document with the requirements of EC Regulation No 1907/2006 REACH and EC Directive No 1272/2008 CLP were performed by an independent specialist – Ing. Oldřich Petira, CSc., an authorized specialist in the fields of chemistry and environmental protection with an emphasis on industrial toxicology and chemical safety of the environment.

**Proclamation:** *Material This Material Safety Data Sheet has been elaborated in accordance with the Regulation (EC) No 1907/2006 REACH. It contains information necessary to ensure safety and protection of health at work and of the environment. This information does not substitute quality specification and should not be construed as any guarantee of suitability for particular applications. The data contained are based on the present state of knowledge and current national legislation. The user is responsible for ensuring the compliance with the relevant regional legislation.*

According to the authorization form on behalf of UNIPETROL RPA,s.r.o. elaborated by:  
Health, Safety, Environment & Quality (HSE&Q) Department, UNIPETROL SERVICES, s.r.o.



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**ANNEX OF MATERIAL SAFETY DATA SHEET**

**EXPOSURE SCENARIOS ACCORDING TO ARTICLE 31 OF REGULATION (EC) NO 1907/2006 (REACH) OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

Exposure scenarios for isolated intermediate product used under strictly controlled conditions are not required.