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

1.1. Product identifier

Product form	: Substance
Trade name/designation	: Benzene
Chemical name	: Benzene
EC Index	: 601-020-00-8
EC-No.	: 200-753-7
CAS-No.	: 71-43-2
REACH registration No	: 01-2119447106-44-0096
Product group	: Trade product

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

1.2.1. Relevant identified uses

Main use category	: Industrial uses
Use of the substance/mixture	: transported isolated intermediate

Title	Use descriptors
Intermediate	SU8, SU9, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15, ERC6a
Manufacture	SU8, SU9, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15, ERC1

Full text of use descriptors: see section 16

1.2.2. Uses advised against

No data available

1.3. Details of the supplier of the safety data sheet

Supplier

NIS a.d. Novi Sad
 Narodnog Fronta 12
 21000 Novi Sad - Serbia
 T + 381 (0) 21 481 1111
Dragana.Cvetkov@nis.eu (REACH)

Only Representative

REACH Law Ltd.
 Vänrikinkuja 3 JK 21
 02600 Espoo - Finland
 T +358(0) 9 412 3055 - F +358 (0) 9 412 3049
sds@reachlaw.fi


Manufacturer

NIS a.d. Novi Sad
 Narodnog Fronta 12
 21000 Novi Sad - Serbia
 T + 381 (0) 21 481 1111
Dragana.Cvetkov@nis.eu (REACH)

1.4. Emergency telephone number

Emergency number : + 381 (0) 21 481 1111 (This telephone number is available during office hours only.)

Country	Official advisory body	Address	Emergency number
Ireland	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9 Dublin	+353 1 809 21 66 (public, 8am - 10pm, 7/7) +353 01 809 2566 (Professionals, 24/7)
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0844 892 0111 (UK only, 24/7, healthcare professionals only)

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flam. Liq. 2 H225
 Skin Irrit. 2 H315
 Eye Irrit. 2 H319
 Muta. 1B H340
 Carc. 1A H350
 STOT RE 1 H372
 Asp. Tox. 1 H304

Full text of H statements : see section 16

2.2. Label elements

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

Hazard pictograms (CLP) :



Signal word :

Danger

Hazard statements (CLP) :

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.

Precautionary statements (CLP) :

P202 - Do not handle until all safety precautions have been read and understood.
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. heat, hot surfaces, open flames, sparks
 P240 - Ground and bond container and receiving equipment.
 P280 - Wear eye protection, face protection, protective clothing, protective gloves.
 P303+ P361+ P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P301+P310+P331 - IF SWALLOWED: Immediately call a POISON CENTER/doctor/.... Do NOT induce vomiting.

Extra phrases :

Restricted to professional users

Listed in Annex VI :

EC Index-No. : 601-020-00-8

2.3. Other hazards

Other hazards :


This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance name :

Benzene

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CAS-No. : 71-43-2
 EC-No. : 200-753-7
 EC Index : 601-020-00-8

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Benzene	(CAS-No.) 71-43-2 (EC-No.) 200-753-7 (EC Index) 601-020-00-8	99,9 - 100	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 1B, H340 Carc. 1A, H350 STOT RE 1, H372 Asp. Tox. 1, H304

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

Additional advice : First aider: Pay attention to self-protection. See also section 8. Never give anything by mouth to an unconscious person. Show this safety data sheet to the doctor in attendance. Treat symptomatically. In case of doubt or persistent symptoms, consult always a physician.

Inhalation : Keep at rest. Provide fresh air. Give oxygen or artificial respiration if necessary. Call a physician immediately.

Skin contact : After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. In case of doubt or persistent symptoms, consult always a physician.

Eyes contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. If symptoms persist, call a physician.

Ingestion : Call a physician immediately. Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Do not give milk or alcoholic beverages.

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

Inhalation : Vapours may cause drowsiness and dizziness. May cause respiratory irritation. Toxic: danger of serious damage to health by prolonged exposure through inhalation.

Skin contact : Irritating to skin. Toxic: danger of serious damage to health by prolonged exposure in contact with skin.

Eyes contact : Irritating to eyes.

Ingestion : Harmful: may cause lung damage if swallowed. Toxic: danger of serious damage to health by prolonged exposure if swallowed. Smallest quantities reaching the lungs through swallowing or subsequent vomiting may result in lung oedema or pneumonia. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache). May cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

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


No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray, Alcohol resistant foam, Carbon dioxide, Dry extinguishing powder.

Unsuitable extinguishing media : Strong water jet.

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5.2. Special hazards arising from the substance or mixture

Specific hazards : Highly flammable liquid and vapour. Evacuate personnel to a safe area. Vapours may form explosive mixture with air. Vapours are heavier than air and may spread along floors. Vapours can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. Use water spray or fog for cooling exposed containers. Hazardous decomposition products COx. Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.

5.3. Advice for firefighters

Firefighting instructions : Special protective equipment for firefighters. See also section 8.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

For non-emergency personnel : Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Do not breathe vapour/aerosol. Avoid contact with skin, eyes and clothing. Provide adequate ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ensure equipment is adequately earthed. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixture with air. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours.

6.1.2. For emergency responders

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Remove all sources of ignition. Use only non-sparking tools. Provide adequate ventilation. Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite or powdered limestone. Keep in suitable, closed containers for disposal. Stop leak if safe to do so. Delivery to an approved waste disposal company. Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.

6.4. Reference to other sections


Concerning disposal elimination after cleaning, see section 13. Concerning personal protective equipment to use, see section 8 .

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : This substance should be handled under strictly controlled conditions as specified in REACH regulation article 18(4). Site documentation to support safe handling arrangements in accordance with risk-based management system should be available at each manufacturing site. During the whole lifecycle all necessary measures should be undertaken to minimize emissions and any resulting exposure. Use product only in closed system. Concerning personal protective equipment to use, see section 8. Do not smoke. Provide adequate ventilation. Avoid contact with skin, eyes and clothing. Do not breathe vapour/aerosol. After use replace the closing cap immediately. Do not burn, or use a cutting torch on the empty drum. Do not pierce or burn, even after use. Ensure equipment is adequately earthed.

Hygiene measures : Keep good industrial hygiene. Wash hands and face before breaks and immediately after handling of the product. When using do not eat, drink or smoke. Take off contaminated clothing.

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7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Do not store near or with any of the incompatible materials listed in section 10. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep only in the original container.

7.3. Specific end use(s)

transported isolated intermediate.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Benzene (71-43-2)		
EU	IOELV TWA (mg/m ³)	3,25 mg/m ³ (measured or calculated in relation to a reference period of eight hours)
EU	IOELV TWA (ppm)	1 ppm (measured or calculated in relation to a reference period of eight hours)
EU	Notes	Substantial contribution to the total body burden via dermal exposure possible
Austria	TEL TRK (mg/m ³)	3,2 mg/m ³
Austria	TEL TRK (ppm)	1 ppm
Belgium	Limit value (mg/m ³)	3,25 mg/m ³
Belgium	Limit value (ppm)	1 ppm
Bulgaria	OEL TWA (mg/m ³)	3,25 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	3,25 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	1 ppm
Cyprus	OEL TWA (mg/m ³)	3,25 mg/m ³
Cyprus	OEL TWA (ppm)	1 ppm
Czech Republic	Expoziční limity (PEL) (mg/m ³)	3 mg/m ³
Denmark	Grænseværdie (langvarig) (mg/m ³)	1,6 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	0,5 ppm
Estonia	OEL TWA (mg/m ³)	1,5 mg/m ³
Estonia	OEL TWA (ppm)	0,5 ppm
Estonia	OEL STEL (mg/m ³)	9 mg/m ³
Estonia	OEL STEL (ppm)	3 ppm
Finland	HTP-arvo (8h) (mg/m ³)	3,25 mg/m ³ (all works)
Finland	HTP-arvo (8h) (ppm)	1 ppm (all works)
France	VME (mg/m ³)	3,25 mg/m ³ (restrictive limit)
France	VME (ppm)	1 ppm (restrictive limit)
Greece	OEL TWA (mg/m ³)	3,19 mg/m ³
Greece	OEL TWA (ppm)	1 ppm
Hungary	MK-érték	3 mg/m ³
Ireland	OEL (8 hours ref) (mg/m ³)	3 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	1 ppm
Ireland	OEL (15 min ref) (mg/m ³)	9 mg/m ³ (calculated)
Ireland	OEL (15 min ref) (ppm)	3 ppm (calculated)
Italy	OEL TWA (mg/m ³)	3,25 mg/m ³
Italy	OEL TWA (ppm)	1 ppm
Latvia	OEL TWA (mg/m ³)	3,25 mg/m ³



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Latvia	OEL TWA (ppm)	1 ppm
Lithuania	IPRV (mg/m ³)	3,25 mg/m ³
Lithuania	IPRV (ppm)	1 ppm
Lithuania	TPRV (mg/m ³)	19 mg/m ³
Lithuania	TPRV (ppm)	6 ppm
Luxembourg	OEL TWA (mg/m ³)	3,25 mg/m ³
Luxembourg	OEL TWA (ppm)	1 ppm
Netherlands	Grenswaarde TGG 8H (mg/m ³)	3,25 mg/m ³
Poland	NDS (mg/m ³)	1,6 mg/m ³
Portugal	OEL TWA (ppm)	0,5 ppm
Portugal	OEL STEL (ppm)	2,5 ppm
Romania	OEL TWA (mg/m ³)	3,25 mg/m ³
Romania	OEL TWA (ppm)	1 ppm
Slovenia	OEL TWA (mg/m ³)	3,25 mg/m ³
Slovenia	OEL TWA (ppm)	1 ppm
Slovenia	OEL STEL (mg/m ³)	13 mg/m ³
Slovenia	OEL STEL (ppm)	4 ppm
Spain	VLA-ED (mg/m ³)	3,25 mg/m ³ (manufacturing, commercialization and use restrictions according to REACH)
Spain	VLA-ED (ppm)	1 ppm (manufacturing, commercialization and use restrictions according to REACH)
Sweden	nivågränsvärde (NVG) (mg/m ³)	1,5 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	0,5 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	9 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	3 ppm
United Kingdom	WEL TWA (mg/m ³)	3,25 mg/m ³
United Kingdom	WEL TWA (ppm)	1 ppm
United Kingdom	WEL STEL (mg/m ³)	9,75 mg/m ³ (calculated)
United Kingdom	WEL STEL (ppm)	3 ppm (calculated)
Norway	Grenseverdier (AN) (mg/m ³)	3 mg/m ³
Norway	Grenseverdier (AN) (ppm)	1 ppm
Norway	Grenseverdier (Korttidsverdi) (mg/m ³)	6 mg/m ³ (value calculated)
Norway	Grenseverdier (Korttidsverdi) (ppm)	2 ppm (value calculated)
Switzerland	MAK (mg/m ³)	1,6 mg/m ³
Switzerland	MAK (ppm)	0,5 ppm
Australia	TWA (mg/m ³)	3,2 mg/m ³
Australia	TWA (ppm)	1 ppm
Canada (Quebec)	VECD (mg/m ³)	15,5 mg/m ³
Canada (Quebec)	VECD (ppm)	5 ppm
Canada (Quebec)	VEMP (mg/m ³)	3 mg/m ³
Canada (Quebec)	VEMP (ppm)	1 ppm
USA - ACGIH	ACGIH TWA (ppm)	0,5 ppm
USA - ACGIH	ACGIH STEL (ppm)	2,5 ppm
USA - IDLH	US IDLH (ppm)	500 ppm


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Benzene (71-43-2)		
USA - NIOSH	NIOSH REL (TWA) (ppm)	0,1 ppm
USA - NIOSH	NIOSH REL (STEL) (ppm)	1 ppm
USA - OSHA	OSHA PEL (TWA) (ppm)	10 ppm 1 ppm
USA - OSHA	OSHA PEL (STEL) (ppm)	5 ppm (see 29 CFR 1910.1028)
USA - OSHA	OSHA PEL (Ceiling) (ppm)	25 ppm

Benzene (71-43-2)	
DNEL/DMEL (workers)	
Long-term - systemic effects, dermal	234 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	3,25 mg/m ³
DNEL/DMEL (general population)	
Long-term - systemic effects, oral	0,0001404 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	0,00325 mg/m ³
Long-term - systemic effects, dermal	234 mg/kg bodyweight/day
PNEC (water)	
PNEC aqua (freshwater)	1,9 mg/l
PNEC aqua (marine water)	1,9 mg/l
PNEC aqua (intermittent, freshwater)	1,9 mg/l
PNEC aqua (intermittent, marine water)	1,9 mg/l
PNEC (sediment)	
PNEC sediment (freshwater)	33 mg/kg dwt
PNEC sediment (marine water)	33 mg/kg dwt
PNEC (soil)	
PNEC soil	4,8 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	39 mg/l

8.2. Exposure controls

- Engineering measure(s) : This substance should be handled under strictly controlled conditions as specified in REACH regulation article 18(4). Site documentation to support safe handling arrangements in accordance with risk-based management system should be available at each manufacturing site. During the whole lifecycle all necessary measures should be undertaken to minimize emissions and any resulting exposure. Use product only in closed system. Use only in area provided with appropriate exhaust ventilation. Provide adequate ventilation. Take precautionary measures against static discharge. Organisational measures to prevent /limit releases, dispersion and exposure. See also section 7.
- Personal protective equipment : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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Hand protection	: Protective gloves (EN 374). PVA. Breakthrough time : >360min. The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves.
Eye protection	: Safety glasses with side-shields. Goggles. EN 166
Body protection	: Overalls, apron and boots recommended.
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. Half-face mask (DIN EN 140) (EN 140). full face mask (DIN EN 136) (EN 136). Filter type: (Type A - EN 141). Self-contained open-circuit compressed air breathing apparatus (EN 137) .
Thermal hazard protection	: Not required for normal conditions of use.
Environmental exposure controls	: Do not allow to enter into surface water or drains. Comply with applicable Community environmental protection legislation.


SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Molecular weight	: 78,12 g/mol
Colour	: clear.
Odour	: Characteristic. aromatic.
Odour threshold	: No data available No data available
pH	: Not applicable
Relative evaporation rate (butylacetate=1)	: No data available
Melting / freezing point	: 5,5 °C
Freezing point	: No data available
Initial boiling point and boiling range	: 80,1 °C
Flash point	: -11 °C
Auto-ignition temperature	: 562 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable, liquid
Vapour pressure	: 10 kPa (20°C)
Vapour density	: 2,77
Relative density	: 0.880 - 0.886 (20°C)
Solubility	: Water: 1 g/l
Partition coefficient n-octanol/water	: 1,9
Kinematic viscosity	: No data available
Dynamic viscosity	: No data available
Explosive properties	: Not applicable. The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.
Oxidising properties	: Not applicable. The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.
Explosive limits	: 1,3 vol % 7,1 vol %

9.2. Other information

VOC content	: 100 %
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Additional information : Literary reference

SECTION 10: Stability and reactivity

10.1. Reactivity

Highly flammable. Reference to other sections: 10.5.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

10.5. Incompatible materials

Incompatible with strong acids and oxidizing agents.

10.6. Hazardous decomposition products

Thermal decomposition can lead to the escape of irritating gases and vapours. Hazardous decomposition products. Carbon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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

Benzene (71-43-2)	
LD50/oral/rat	> 2000 mg/kg
LD50/dermal/rabbit	> 5000 mg/kg
LC50 inhalation rat (Vapours - mg/l/4h)	44,5 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.
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 : May cause genetic defects.

Carcinogenicity : May cause cancer.
LOAEL, Oral, Rat: 25 mg/kg bw/day

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met.)
NOAEC, May damage fertility, Inhalation: 960 mg/m³
NOAEC, Developmental toxicity, Inhalation, Rat: 32 mg/m³

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met.)

STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure.

Benzene (71-43-2)	
NOAEC, Chronic, Inhalation, human, systemic	11.2 mg/m ³


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

Other information : Symptoms related to the physical, chemical and toxicological characteristics.
Reference to other sections: 4.2.

SECTION 12: Ecological information

12.1. Toxicity

Environmental properties : Ecological injuries are not known or expected under normal use.

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Benzene (71-43-2)	
LC50 fish 1	eco mg/l (96 h)
EC50 Daphnia 1	10 mg/l (48h)
ErC50 (algae)	100 mg/l (72 h)
LOEC (chronic)	1,6 mg/l
NOEC (chronic)	3 mg/l Invertebrates.
NOEC chronic fish	0,8 mg/l
NOEC chronic crustacea	3 mg/l
NOEC chronic algae	≈
ErC10, BIOMASS, 72h, algae	10 mg/l
ErC10, Growth rate, 72h, algae	34 mg/l
IC50, 24h, micro-organisms	13 mg/l

12.2. Persistence and degradability

Benzene (71-43-2)	
Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

Benzene (71-43-2)	
Partition coefficient n-octanol/water	1,9
Benzene (71-43-2)	
Bioconcentration factor (BCF)	< 10
Partition coefficient n-octanol/water	2,13

12.4. Mobility in soil

Benzene (71-43-2)	
Ecology - soil	No data available.
Benzene (71-43-2)	
Surface tension	Justification for data waiving

12.5. Results of PBT and vPvB assessment

No data available


12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations






13.1. Waste treatment methods

Product/Packaging disposal recommendations	: Handle with care. Safe handling: see section 7. Handling and storage. Dispose of contaminated materials in accordance with current regulations. Refer to manufacturer/supplier for information on recovery/recycling. Collect and dispose of waste product at an authorised disposal facility.
Additional information	: Delivery to an approved waste disposal company.
Further ecological information	: Do not allow to enter into surface water or drains.
European waste catalogue (2001/573/EC, 75/442/EEC, 91/689/EEC)	: Classified as hazardous waste according to European Union regulations. The following Waste Codes are only suggestions: 150110 - packaging containing residues of or contaminated by dangerous substances Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

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SECTION 14: Transport information


In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
1114	1114	1114	1114	1114
14.2. UN proper shipping name				
BENZENE	BENZENE	Benzene	BENZENE	BENZENE
Transport document description				
UN 1114 BENZENE, 3, II, (D/E)	UN 1114 BENZENE, 3, II (-11°C c.c.)	UN 1114 Benzene, 3, II	UN 1114 BENZENE, 3, II	UN 1114 BENZENE, 3, II
14.3. Transport hazard class(es)				
3	3	3	3	3
				
14.4. Packing group				
II	II	II	II	II
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
ADN : N3				

14.6. Special precautions for user

- Overland transport

- Classification code (ADR) : F1
- Limited quantities (ADR) : 1I
- Excepted quantities (ADR) : E2
- Packing instructions (ADR) : P001, IBC02, R001
- Mixed packing provisions (ADR) : MP19
- Portable tank and bulk container instructions (ADR) : T4
- Portable tank and bulk container special provisions (ADR) : TP1
- Tank code (ADR) : LGBF
- Vehicle for tank carriage : FL
- Transport category (ADR) : 2
- Special provisions for carriage - Operation (ADR) : S2, S20
- Hazard identification number (Kemler No.) : 33
- Orange plates : 
- Tunnel restriction code : D/E
- EAC code : 3WE
- APP code : A(fl)

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- Transport by sea

Limited quantities (IMDG) : 1 L
 Excepted quantities (IMDG) : E2
 Packing instructions (IMDG) : P001
 IBC packing instructions (IMDG) : IBC02
 Tank instructions (IMDG) : T4
 Tank special provisions (IMDG) : TP1
 EmS-No. (Fire) : F-E
 EmS-No. (Spillage) : S-D
 Stowage category (IMDG) : B
 Stowage and handling (IMDG) : SW2
 Flash point (IMDG) : -11°C c.c.
 Properties and observations (IMDG) : Colourless liquid with a characteristic odour. Flashpoint: -11°C c.c. Explosive limits: 1.4% to 8% Freezing point 5°C, flashes below its freezing point. Immiscible with water. Narcotic. Exposure to this substance may produce serious chronic effects of a toxic nature.

- Air transport


PCA Excepted quantities (IATA) : E2
 PCA Limited quantities (IATA) : Y341
 PCA limited quantity max net quantity (IATA) : 1L
 PCA packing instructions (IATA) : 353
 PCA max net quantity (IATA) : 5L
 CAO packing instructions (IATA) : 364
 CAO max net quantity (IATA) : 60L
 ERG code (IATA) : 3H

- Inland waterway transport

Classification code (ADN) : F1
 Limited quantities (ADN) : 1 L
 Excepted quantities (ADN) : E2
 Carriage permitted (ADN) : T
 Equipment required (ADN) : PP, EX, A
 Ventilation (ADN) : VE01
 Number of blue cones/lights (ADN) : 1

- Rail transport

Classification code (RID) : F1
 Limited quantities (RID) : 1L
 Excepted quantities (RID) : E2
 Packing instructions (RID) : P001, IBC02, R001
 Mixed packing provisions (RID) : MP19
 Portable tank and bulk container instructions (RID) : T4
 Portable tank and bulk container special provisions (RID) : TP1
 Tank codes for RID tanks (RID) : LGBF
 Transport category (RID) : 2
 Colis express (express parcels) (RID) : CE7
 Hazard identification number (RID) : 33

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14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

3. Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008	Benzene - Benzene
3(a) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F	Benzene - Benzene
3(b) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	Benzene - Benzene
5. Benzene	Benzene - Benzene
28. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as Carcinogen category 1A or 1B (Table 3.1) or Carcinogen category 1 or 2 (Table 3.2) and listed as follows: Carcinogen category 1A (Table 3.1)/Carcinogen category 1 (Table 3.2) listed in Appendix 1 Carcinogen category 1B (Table 3.1)/Carcinogen category 2 (Table 3.2) listed in Appendix 2	Benzene - Benzene
29. Substances which appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 classified as Germ cell Mutagen category 1A or 1B (Table 3.1) or Mutagen category 1 or 2 (Table 3.2) and listed as follows: Mutagen category 1A (Table 3.1)/Mutagen category 1 (Table 3.2) listed in Appendix 3 Mutagen category 1B (Table 3.1)/Mutagen category 2 (Table 3.2) listed in Appendix 4	Benzene - Benzene
40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	Benzene - Benzene

Benzene is not on the REACH Candidate List

Benzene is not on the REACH Annex XIV List

VOC content : 100 %

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 3, severe hazard to waters (Classification according to VwVwS, Annex 1 or 2; ID No. 29)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)


Netherlands

Waterbezuwaarlijkheid : 2 - May cause hereditary genetic damage : (A)
3 - May cause cancer. : (A)

SZW-lijst van kankerverwekkende stoffen : Benzene is listed

SZW-lijst van mutagene stoffen : Benzene is listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

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NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

Classification remarks : Emergency management guidelines for the storage of flammable liquids must be followed

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment

For this substance a chemical safety assessment has been carried out


SECTION 16: Other information

Indication of changes:

Safety datasheet sections which have been updated 1,2,3.

Abbreviations and acronyms:

	DNEL = Derived No Effect Level
	DMEL = Derived Minimal Effect level
	PNEC = Predicted No Effect Concentration
	OEL-STEL = Occupational Exposure Limits - Short Term Exposure Limits (STELs)
	TWA = time weighted average
	LC50 = Median lethal concentration
	LD50 = Median lethal dose
	LL50 = Median lethal level
	EC50 = Median Effective Concentration
	EL50 = Median effective level
	ErC50 = EC50 in terms of reduction of growth rate
	ErL50 = EL50 in terms of reduction of growth rate
	NOEL = no-observed-effect level
	NOEC = No observed effect concentration
	NOELR = No observed effect loading rate
	NOAEC = No observed adverse effect concentration
	NOAEL = No observed adverse effect level
	EWC = European waste catalogue
	NA = Not applicable
	N.O.S. = Not Otherwise Specified
	VOC = Volatile organic compounds
	mg/kg BW = mg/kg bodyweight
	QSAR = Quantitative structure-activity relationship (QSAR)
	ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC IATA = International Air Transport Association IMDG = International Maritime Dangerous Goods Code LEL = Lower Explosive Limit/Lower Explosion Limit UEL = Upper Explosion Limit/Upper Explosive Limit REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
	WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)
	ABM = Algemene beoordelingsmethodiek

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Sources of key data used to compile the datasheet : European Chemicals Bureau Chemical Safety Report. ECHA website.

Full text of H- and EUH-statements:

Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 1A	Carcinogenicity, Category 1A
Eye Irrit. 2	Serious eye damage/eye irritation Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Muta. 1B	Germ cell mutagenicity, hazard categories 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
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.
	Restricted to professional users

According to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

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