

isopentane

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

1.1 Product identifier:

Product name	: isopentane
Synonyms	: 1,1,2-trimethylethane; 2-methylbutane; butane, 2-methyl-; ethyldimethylmethane; EXXSOL isopentane; isoamyl hydride; pentane, iso-; R-601a
Registration number REACH	: 01-2119475602-38
Product type REACH	: Substance/mono-constituent
CAS number	: 78-78-4
EC index number	: 601-006-00-1
EC number	: 201-142-8
RTECS number	: EK4430000
Molecular mass	: 72.15 g/mol
Formula	: C ₅ H ₁₂

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

1.2.1 Relevant identified uses

Industrial and professional use. Before use: carry out a risk assessment

1.2.2 Uses advised against

No uses advised against known

1.3 Details of the supplier of the safety data sheet:

Supplier of the safety data sheet

CHEMOGAS NV
Westvaartdijk 85
B-1850 Grimbergen Belgium
☎ +32 2 251 60 87
✉ +32 2 252 17 51
info@chemogas.com

Distributor of the product

CHEMOGAS NV
Westvaartdijk 85
B-1850 Grimbergen Belgium
☎ +32 2 251 60 87
✉ +32 2 252 17 51
info@chemogas.com

1.4 Emergency telephone number:

24h/24h (Telephone advice: English, French, German, Dutch):
+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Flam. Liq.	category 1	H224: Extremely flammable liquid and vapour.
Asp. Tox.	category 1	H304: May be fatal if swallowed and enters airways.
STOT SE	category 3	H336: May cause drowsiness or dizziness.
Aquatic Chronic	category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements:



Signal word

H-statements

H224

H304

H336



Danger



Extremely flammable liquid and vapour.

May be fatal if swallowed and enters airways.

May cause drowsiness or dizziness.



isopentane

H411	Toxic to aquatic life with long lasting effects.
P-statements	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves and eye protection/face protection.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P331	Do NOT induce vomiting.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
Supplemental information	
EUH066	Repeated exposure may cause skin dryness or cracking.

2.3 Other hazards:

May build up electrostatic charges: risk of ignition
May be ignited by sparks
Gas/vapour spreads at floor level: ignition hazard
Heat may cause pressure rise in tanks/drums: explosion risk

SECTION 3: Composition/information on ingredients

3.1 Substances:

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark
isopentane 01-2119475602-38	78-78-4 201-142-8	C>99 %	Flam. Liq. 1; H224 Asp. Tox. 1; H304 STOT SE 3; H336 Aquatic Chronic 2; H411	(1)(10)(2)	Mono-constituent

(2) Substance with a Community workplace exposure limit

(1) For H-statements in full: see heading 16

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

3.2 Mixtures:

Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures:

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give alcohol to drink.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

After eye contact:

Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

After ingestion:

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not give milk/oil to drink. Do not induce vomiting. Consult a doctor/medical service if you feel unwell.

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

4.2.1 Acute symptoms

After inhalation:

Slight irritation. Dry/sore throat. EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the nasal mucous membranes. Coughing. Nausea. Central nervous system depression. Headache. Dizziness. Narcosis. Coordination disorders. Disturbances of consciousness. Respiratory difficulties. Disturbances of heart rate.

After skin contact:

Red skin. ON CONTINUOUS EXPOSURE/CONTACT: Dry skin. Cracking of the skin.

After eye contact:

Redness of the eye tissue.

After ingestion:

Risk of aspiration pneumonia. Nausea.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

Publication date: 2015-06-25

Reference number: 3520

Product number: 10289

Revision number: 0000

2 / 11

isopentane

SECTION 5: Firefighting measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media:

BC powder. Carbon dioxide. Sand/earth. MAJOR FIRE: Polyvalent foam. Water spray.

5.1.2 Unsuitable extinguishing media:

Solid water jet ineffective as extinguishing medium.

5.2 Special hazards arising from the substance or mixture:

Upon combustion: CO and CO₂ are formed.

5.3 Advice for firefighters:

5.3.1 Instructions:

If no hazard for/from the surroundings: controlled burning. If hazardous substances are nearby: consider extinguishment. Extinguish only if gas supply/leak can be shut afterwards. Cool tanks/drums with water spray/remove them into safety. Physical explosion risk: extinguish/cool from behind cover. Do not move the load if exposed to heat. After cooling: persistent risk of physical explosion. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Keep upwind. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Keep containers closed.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus.

Suitable protective clothing

See heading 8.2

6.2 Environmental precautions:

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Prevent soil and water pollution. Prevent spreading in sewers.

6.3 Methods and material for containment and cleaning up:

Prevent evaporation by covering with: foam. Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4 Reference to other sections:

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1 Precautions for safe handling:

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Gas/vapour heavier than air at 20°C. Observe normal hygiene standards. Keep container tightly closed. Remove contaminated clothing immediately. Do not discharge the waste into the drain.

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

Storage temperature: <50 °C. Store below 50°C. Keep out of direct sunlight. Ventilation at floor level. Fireproof storeroom. Provide for an automatic sprinkler system. Provide for a tub to collect spills. Provide the tank with earthing. May be stored under nitrogen. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, ignition sources, combustible materials, oxidizing agents.

7.2.3 Suitable packaging material:

Steel, stainless steel, carbon steel, polyethylene, polypropylene, glass, Teflon.

7.2.4 Non suitable packaging material:

Natural rubber, butyl rubber, EPDM, polystyrene.

7.3 Specific end use(s):

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:

Publication date: 2015-06-25

Reference number: 3520

Product number: 10289

Revision number: 0000

3 / 11

isopentane

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

The Netherlands

isopentane	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	600 ppm
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	1800 mg/m ³

EU

Isopentane	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	1000 ppm
	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	3000 mg/m ³

Belgium

Pentane, tous isomères	Time-weighted average exposure limit 8 h	600 ppm
	Time-weighted average exposure limit 8 h	1800 mg/m ³
	Short time value	750 ppm
	Short time value	2250 mg/m ³

USA (TLV-ACGIH)

Pentane, all isomers	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	1000 ppm
----------------------	--	----------

Germany

Methylbutan	Time-weighted average exposure limit 8 h (TRGS 900)	1000 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	3000 mg/m ³

France

Isopentane	Time-weighted average exposure limit 8 h (VRI: Valeur réglementaire indicative)	1000 ppm
	Time-weighted average exposure limit 8 h (VRI: Valeur réglementaire indicative)	3000 mg/m ³

UK

Isopentane	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	600 ppm
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	1800 mg/m ³

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

If applicable and available it will be listed below.

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL - Workers

isopentane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	3000 mg/m ³	
	Long-term systemic effects dermal	432 mg/kg bw/day	

DNEL - General population

isopentane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	643 mg/m ³	
	Long-term systemic effects dermal	214 mg/kg bw/day	
	Long-term systemic effects oral	214 mg/kg bw/day	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2 Exposure controls:

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

8.2.2 Individual protection measures, such as personal protective equipment

Publication date: 2015-06-25

Reference number: 3520

Product number: 10289

isopentane

Observe normal hygiene standards. Keep container tightly closed. Do not eat, drink or smoke during work.

a) Respiratory protection:

Gas mask with filter type AX at conc. in air > exposure limit.

b) Hand protection:

Gloves.

- materials (good resistance)

Nitrile rubber, PVA, PVC, neoprene.

c) Eye protection:

Protective goggles.

d) Skin protection:

Head/neck protection. Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical form	Liquid
Odour	Almost odourless
	Paraffin odour
	Petroleum-like odour
Odour threshold	No data available
Colour	Colourless
Particle size	Not applicable (liquid)
Explosion limits	1.4 - 7.6 vol %
	38 - 230 g/m ³
Flammability	Extremely flammable liquid and vapour.
Log Kow	4 ; Experimental value ; OECD 117 ; 25 °C
Dynamic viscosity	0.214 mPa.s ; 25 °C
Kinematic viscosity	0.32 mm ² /s ; 25 °C
Melting point	-160 °C
Boiling point	28 °C ; 1013 hPa
Flash point	-51 °C ; 1013 hPa
Evaporation rate	1 ; ether
	12 ; butyl acetate
Relative vapour density	2.5
Vapour pressure	791 hPa ; 20 °C
	2055 hPa ; 50 °C
	1000 hPa ; 27.5 °C
Solubility	water ; 0.005 g/100 ml ; 25 °C
Relative density	0.62 ; 20 °C
Decomposition temperature	No data available
Auto-ignition temperature	420 °C ; 1013 hPa
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	Not applicable

9.2 Other information:

Minimum ignition energy	0.70 mJ
Specific conductivity	0.25 pS/m ; room temperature
Softening point	-57 °C
Critical temperature	187 °C
Critical pressure	33336 hPa
Surface tension	0.01549 N/m ; 25 °C ; 100 vol %
Relative density saturated vapour/air mixture	2.5
Absolute density	624 kg/m ³

SECTION 10: Stability and reactivity

10.1 Reactivity:

May build up electrostatic charges: risk of ignition. May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard. Substance has neutral reaction.

10.2 Chemical stability:

Stable under normal conditions.

10.3 Possibility of hazardous reactions:

Reacts with (strong) oxidizers: (increased) risk of fire/explosion.

Publication date: 2015-06-25

Reference number: 3520

Product number: 10289

Revision number: 0000

5 / 11

isopentane

10.4 Conditions to avoid:

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks.

10.5 Incompatible materials:

Combustible materials, oxidizing agents.

10.6 Hazardous decomposition products:

Upon combustion: CO and CO₂ are formed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

11.1.1 Test results

Acute toxicity

isopentane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 423	> 5000 mg/kg		Rat (male/female)	Read-across	
Dermal						Data waiving	
Inhalation (vapours)	LC50	OECD 403	> 25.3 mg/l	4 h	Rat (male/female)	Read-across	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

isopentane

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	OECD 405		1; 24; 48; 72 hours	Rabbit	Read-across	
Skin	Not irritating	Equivalent to OECD 404	4 h	24; 72 hours	Rabbit	Read-across	

Conclusion

Not classified as irritating to the skin

Not classified as irritating to the eyes

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

isopentane

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Intradermal	Not sensitizing	Equivalent to OECD 406		24; 48 hours	Guinea pig (female)	Experimental value	

Conclusion

Not classified as sensitizing for skin

Not classified as sensitizing for inhalation

Specific target organ toxicity

isopentane

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	Dose level	Subacute toxicity test	500 mg/kg bw/day	Kidney	No effect	4 weeks (5 days/week)	Rat (male)	Experimental value
Dermal								Data waiving
Inhalation (vapours)	NOEC	OECD 413	> 2220 ppm	General	No effect	13 weeks (6h/day, 5 days/week)	Rat (male/female)	Experimental value
Inhalation (vapours)	NOEC	OECD 413	≥ 6646 ppm	Central nervous system	No effect	13 weeks (6h/day, 5 days/week)	Rat (male/female)	Experimental value

Conclusion

May cause drowsiness or dizziness.

Not classified for subchronic toxicity

Mutagenicity (in vitro)

isopentane

Result	Method	Test substrate	Effect	Value determination
--------	--------	----------------	--------	---------------------

Publication date: 2015-06-25

Reference number: 3520

Product number: 10289

Revision number: 0000

6 / 11

isopentane

Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Bacteria (<i>S.typhimurium</i>)	No effect	Experimental value
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 473	Chinese hamster ovary (CHO)	No effect	Read-across

Mutagenicity (in vivo)

isopentane

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	EU Method B.12		Rat (male/female)	Bone marrow	Read-across

Carcinogenicity

isopentane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Organ	Effect
Inhalation						Data waiving		
Dermal						Data waiving		
Oral						Data waiving		

Reproductive toxicity

isopentane

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEC	Equivalent to OECD 414	7000 ppm	2 weeks (6h/day, 5 days/week)	Rat	No effect	Foetus	Read-across
Maternal toxicity	NOAEC	OECD 414	500 ppm - 2000 ppm	2 weeks (6h/day, 5 days/week)	Rat	No effect		Read-across
Effects on fertility	NOAEC	Equivalent to OECD 416	7000 ppm		Rat (male/female)	No effect		Read-across

Conclusion CMR

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

Not classified for reprotoxic or developmental toxicity

Aspiration hazard

May be fatal if swallowed and enters airways.

Toxicity other effects

isopentane

No (test) data available

Conclusion

Repeated exposure may cause skin dryness or cracking.

Chronic effects from short and long-term exposure

isopentane

No effects known.

SECTION 12: Ecological information

12.1 Toxicity:

isopentane

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	Equivalent to OECD 203	4.26 mg/l	96 h	Oncorhynchus mykiss	Static system	Fresh water	Read-across; GLP
Acute toxicity invertebrates	EC50	Equivalent to OECD 202	2.3 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value
Toxicity algae and other aquatic plants	ErC50	OECD 201	10.7 mg/l	72 h	Selenastrum capricornutum	Static system	Fresh water	Read-across; GLP
Long-term toxicity fish	NOELR		7.618 mg/l	28 day(s)	Oncorhynchus mykiss		Fresh water	QSAR
Long-term toxicity aquatic invertebrates	NOELR		13.29 mg/l	21 day(s)	Daphnia magna		Fresh water	QSAR; Nominal concentration

Publication date: 2015-06-25

Reference number: 3520

Product number: 10289

Revision number: 0000

7 / 11

isopentane

Toxicity aquatic micro-organisms	EL50		130.9 mg/l	48 h	Tetrahymena pyriformis		Fresh water	Growth inhibition
----------------------------------	------	--	------------	------	------------------------	--	-------------	-------------------

Conclusion

Toxic to fishes
Toxic to invertebrates (Daphnia)
Harmful to algae
Slightly harmful to bacteria
Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability:

isopentane

Biodegradation water

Method	Value	Duration	Value determination
OECD 301F: Manometric Respirometry Test	71.43 %; Oxygen consumption	28 day(s)	Experimental value

Half-life air (t1/2 air)

Method	Value	Primary degradation/mineralisation	Value determination
	2.3 day(s)	Primary degradation	Literature study

Conclusion

Readily biodegradable in water

12.3 Bioaccumulative potential:

isopentane

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		171		Pimephales promelas	Read-across

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 117		4	25 °C	Experimental value

Conclusion

Potential for bioaccumulation ($4 \geq \text{Log Kow} \leq 5$)

12.4 Mobility in soil:

isopentane

(log) Koc

Parameter	Method	Value	Value determination
log Koc		2.9	Read-across

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay level III	95.9 %	0 %	0.9 %	0.1 %	3 %	Calculated value

Conclusion

Low potential for mobility in soil

12.5 Results of PBT and vPvB assessment:

Substance does not meet the criteria of PBT, nor the criteria of vPvB according to Annex XIII of Regulation (EC) No 1907/2006, so is neither PBT nor vPvB.

12.6 Other adverse effects:

isopentane

Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1 Waste treatment methods:

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

07 01 04* (wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals: other organic solvents, washing liquids and mother liquors). Depending on branch of industry and production process, also other waste codes may be applicable. Hazardous waste according to Regulation (EU) No 1357/2014.

Publication date: 2015-06-25

Reference number: 3520

Product number: 10289

Revision number: 0000

8 / 11

isopentane

13.1.2 Disposal methods

Recycle by distillation. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into drains or the environment.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).

15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1 UN number:

UN number	1265
-----------	------

14.2 UN proper shipping name:

Proper shipping name	Pentanes, liquid
----------------------	------------------

14.3 Transport hazard class(es):

Hazard identification number	33
Class	3
Classification code	F1

14.4 Packing group:

Packing group	I
Labels	3

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes
--	-----

14.6 Special precautions for user:

Special provisions	
Limited quantities	none.

Rail (RID)

14.1 UN number:

UN number	1265
-----------	------

14.2 UN proper shipping name:

Proper shipping name	Pentanes, liquid
----------------------	------------------

14.3 Transport hazard class(es):

Hazard identification number	33
Class	3
Classification code	F1

14.4 Packing group:

Packing group	I
Labels	3

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes
--	-----

14.6 Special precautions for user:

Special provisions	
Limited quantities	none.

Inland waterways (ADN)

14.1 UN number:

UN number	1265
-----------	------

14.2 UN proper shipping name:

Proper shipping name	Pentanes, liquid
----------------------	------------------

14.3 Transport hazard class(es):

Class	3
Classification code	F1

14.4 Packing group:

Packing group	I
Labels	3

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes
--	-----

14.6 Special precautions for user:

Special provisions	
Limited quantities	none.

Sea (IMDG/IMSBC)

14.1 UN number:

UN number	1265
-----------	------

14.2 UN proper shipping name:

Publication date: 2015-06-25

Reference number: 3520

Product number: 10289

Revision number: 0000

9 / 11

isopentane

Proper shipping name	pentanes
14.3 Transport hazard class(es):	
Class	3
14.4 Packing group:	
Packing group	I
Labels	3
14.5 Environmental hazards:	
Marine pollutant	P
Environmentally hazardous substance mark	yes
14.6 Special precautions for user:	
Special provisions	
Limited quantities	none.
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:	
Annex II of MARPOL 73/78	Not applicable, based on available data

Air (ICAO-TI/IATA-DGR)

14.1 UN number:	
UN number	1265
14.2 UN proper shipping name:	
Proper shipping name	Pentanes
14.3 Transport hazard class(es):	
Class	3
14.4 Packing group:	
Packing group	I
Labels	3
14.5 Environmental hazards:	
Environmentally hazardous substance mark	yes
14.6 Special precautions for user:	
Special provisions	
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	Forbidden

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
100 %	

REACH Annex XVII - Restriction

Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
isopentane	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: (a) 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; (b) 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; (c) hazard class 4.1; (d) hazard class 5.1.	1. Shall not be used in: — ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any article intended to be used as such, even with ornamental aspects, 2. Articles not complying with paragraph 1 shall not be placed on the market. 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they: — can be used as fuel in decorative oil lamps for supply to the general public, and, — present an aspiration hazard and are labelled with R65 or H304, 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN). 5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met: a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life-threatening lung damage"; b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: "Just a sip of grill lighter may lead to life threatening lung damage"; c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010. 6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public. 7. Natural or legal

Publication date: 2015-06-25

Reference number: 3520

Product number: 10289

Revision number: 0000

10 / 11

isopentane

		persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.
isopentane	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 that Regulation or not.	1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following: — metallic glitter intended mainly for decoration, — artificial snow and frost, — “whoopee” cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs.2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: “For professional users only”.3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/ 324/EEC.4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

National legislation The Netherlands

Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 03
Waterbezwaarlijkheid	6

National legislation Germany

Schwangerschaft Gruppe	C
Schwangerschaft Gruppe	C
WGK	2; Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)
TA-Luft	5.2.5; I

National legislation France

No data available

National legislation Belgium

No data available

Other relevant data

No data available

15.2 Chemical safety assessment:

A chemical safety assessment has been performed.

SECTION 16: Other information

Full text of any H-statements referred to under headings 2 and 3:

H224 Extremely flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

H336 May cause drowsiness or dizziness.

H411 Toxic to aquatic life with long lasting effects.

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.

Publication date: 2015-06-25

Reference number: 3520

Product number: 10289

Revision number: 0000

11 / 11