

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	07th February 2020	Version	1.0
Revision date			

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

- 1.1. Product identifier**
 Substance / mixture Ethanol denatured (Euro denaturation) mixture
 Other mixture names Denatured alcohol
- 1.2. Relevant identified uses of the substance or mixture and uses advised against**
 Mixture's intended use Chemical production, analytical chemistry, laboratory synthesis, industrial applications.
 Mixture uses advised against The product should not be used in ways other than those referred in Section 1.
- 1.3. Details of the supplier of the safety data sheet**
Supplier
 Name or trade name Ing. Petr Švec - PENTA s.r.o.
 Address Radiová 1122/1, Praha 10, 102 00
 Czech Republic
 Identification number (CRN) 02096013
 VAT Reg No CZ02096013
 Phone +420 226 060 681
 E-mail info@pentachemicals.eu
 Web address www.pentachemicals.eu
- Competent person responsible for the safety data sheet**
 Name Ing. Petr Švec - PENTA s.r.o.
 E-mail info@pentachemicals.eu
- 1.4. Emergency telephone number**
 National Health Service (NHS) 111
 National poisoning information centre Scotland, NHS 24: 111
 112

SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture**
Classification of the mixture in accordance with Regulation (EC) No 1272/2008
 The mixture is classified as dangerous.
- Flam. Liq. 2, H225
 Eye Irrit. 2, H319
- Full text of all classifications and hazard statements is given in the section 16.
- Most serious adverse physico-chemical effects**
 Highly flammable liquid and vapour.
- Most serious adverse effects on human health and the environment**
 Causes serious eye irritation.

- 2.2. Label elements**
Hazard pictogram



Signal word
 Danger

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date 07th February 2020
Revision date Version 1.0

Hazardous substances

isopropanol
butanone
Denatonium benzoate

Hazard statements

H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.

2.3. Other hazards

Mixture does not contain any substance meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixture of substances and additives specified below.

Mixture contains these hazardous substances and substances with the highest permissible concentration in the working environment

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note.
Index: 603-002-00-5 CAS: 64-17-5 EC: 200-578-6 Registration number: 01-2119457-610-43-xxxx	Ethanol	93-97,5	Flam. Liq. 2, H225 Eye Irrit. 2, H319	
Index: 603-117-00-0 CAS: 67-63-0 EC: 200-661-7	isopropanol	>1	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336	
Index: 606-002-00-3 CAS: 78-93-3 EC: 201-159-0 Registration number: 01-2119457290-43-XXXX	butanone	>1	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336	
CAS: 3734-33-6 EC: 223-095-2	Denatonium benzoate	>0,001	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	

Full text of all classifications and hazard statements is given in the section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Cardiac arrest - provide indirect cardiac massage immediately.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	07th February 2020	Version	1.0
Revision date			

If inhaled

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

If on skin

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists. Rinse skin with water/shower.

If in eyes

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. Rinsing should continue at least for 10 minutes. Provide medical treatment, specialized if possible.

If swallowed

DO NOT INDUCE VOMITING! Rinse out the mouth with water and provide 2-5 dL of water. Provide medical treatment if the person has any health problems.

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

If inhaled

May cause drowsiness or dizziness.

If on skin

Not expected.

If in eyes

Causes serious eye irritation.

If swallowed

Irritation, nausea.

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

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

Unsuitable extinguishing media

Water - full jet.

5.2. Special hazards arising from the substance or mixture

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Closed containers with the product near the fire should be cooled with water. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide sufficient ventilation. Highly flammable liquid and vapour. Remove all ignition sources. Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Prevent contact with skin and eyes.

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water.

6.3. Methods and material for containment and cleaning up

Spilled product should be covered with suitable (non-flammable) absorbing material (sand, diatomaceous earth, earth and other suitable absorption materials); to be contained in well closed containers and removed as per the Section 13. In the event of leakage of the substantial amount of the product, inform fire brigade and other competent bodies. After removal of the product, wash the contaminated site with plenty of water. Do not use solvents.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date 07th February 2020
Revision date Version 1.0

6.4. Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Prevent formation of gases and vapours in flammable or explosive concentrations and concentrations exceeding the occupational exposure limits. The product should be used only in the areas where it is not in contact with open fire and other ignition sources. Use non-sparking tools. Use of antistatic clothes and footwear is recommended. Prevent contact with skin and eyes. No smoking. Use only non-sparking tools. Wash hands and exposed parts of the body thoroughly after handling. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharge.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Do not expose to sunlight. Keep container tightly closed. Keep cool.

The specific requirements or rules relating to the substance/mixture

Solvent vapours are heavier than air and accumulate especially near the floor where they may form an explosive mixture with the air.

7.3. Specific end use(s)

not available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The mixture contains substances for which occupational exposure limits are set.

European Union

Substance name (component)	Type	Time of exposure	Value	Note	Source
butanone (CAS: 78-93-3)	OEL	8 hours	600 mg/m ³		Commission Directive 2000/39/EC
	OEL	8 hours	200 ppm		
	OEL	15 minutes	900 mg/m ³		
	OEL	15 minutes	300 ppm		

8.2. Exposure controls

Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye/face protection

Protective goggles.

Skin protection

Contaminated skin should be washed thoroughly. Hand protection: Protective gloves resistant to the product (butyl rubber, nitrile rubber).

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	07th February 2020	Version	1.0
Revision date			

Respiratory protection

Halfmask with a filter against organic vapours or a self-contained breathing apparatus as appropriate if exposure limit values of substances are exceeded or in a poorly ventilated environment.

Thermal hazard

Not available.

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Physical state	liquid at 20°C
color	colourless
Odour	containing alcohol
Odour threshold	data not available
pH	7 (96% solution)
Melting point/freezing point	-114.5 °C (96)
Initial boiling point and boiling range	78.3 °C
Flash point	12.85 °C (1013 hPa)
Evaporation rate	data not available
Flammability (solid, gas)	data not available
Upper/lower flammability or explosive limits	
flammability limits	data not available
explosive limits	96%
bottom	3.3 %
upper	19 %
Vapour pressure	57.26 hPa at 19.65 °C
Vapour density	1,6
Relative density	data not available
Solubility(ies)	
solubility in water	789000mg/lit 20°C
solubility in fats	data not available
Partition coefficient: n-octanol/water	-0.35 20°C
Auto-ignition temperature	data not available
Decomposition temperature	data not available
Viscosity	data not available
Explosive properties	data not available
Oxidising properties	data not available

9.2. Other information

Density	0.800 g/cm ³
ignition temperature	data not available

SECTION 10: Stability and reactivity

10.1. Reactivity

Vapours may form explosive mixture with air.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Unknown.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date 07th February 2020
Revision date Version 1.0

10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents. rubber, various plastics

10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

No toxicological data is available for the mixture.

Acute toxicity

Based on available data the classification criteria are not met.

butanone

Route of exposure	Parameter	Value	Time of exposure	Species	Sex
Oral	LD50	2738 mg/kg		Rat (Rattus norvegicus)	
Dermal	LD50	>8000 mg/kg		Rabbit	

Denatonium benzoate

Route of exposure	Parameter	Value	Time of exposure	Species	Sex
Oral	LD50	612 mg/kg		Rat (Rattus norvegicus)	

Ethanol

Route of exposure	Parameter	Value	Time of exposure	Species	Sex
Oral	LD50	13300 mg/kg		Rat	
Dermal	LD50	>15800 mg/kg		Rabbit	
Inhalation (vapor)	LC50	124.7 mg/l	4 hour	Rat	

isopropanol

Route of exposure	Parameter	Value	Time of exposure	Species	Sex
Oral	LD50	>2000 mg/kg		Rat	
Inhalation (vapor)	LC50	>5 mg/kg	4 hour	Rat	
Oral	LD50	4710 mg/kg		Rat	
Inhalation (vapor)	LC50	72.6 mg/l	4 hour	Rat	
Dermal	LD50	12870 mg/kg		Rabbit	
Dermal	LD50	>2000 mg/kg		Rat	

Skin corrosion/irritation

Based on available data the classification criteria are not met.

Ethanol

Route of exposure	Result	Time of exposure	Species
	No effect		Rabbit

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date 07th February 2020
Revision date Version 1.0

Serious eye damage/irritation

Causes serious eye irritation.

Ethanol

Route of exposure	Result	Time of exposure	Species
	Irritating		Rabbit

isopropanol

Route of exposure	Result	Time of exposure	Species
	Highly irritating		Rabbit

Respiratory or skin sensitisation

Based on available data the classification criteria are not met.

Ethanol

Route of exposure	Result	Time of exposure	Species	Sex
	Indeterminate		Human	

Mutagenicity

Ethanol

Result	Time of exposure	Specific target organ	Species	Sex
Indeterminate				

Germ cell mutagenicity

Based on available data the classification criteria are not met.

Carcinogenicity

Based on available data the classification criteria are not met.

Ethanol

Route of exposure	Parameter	Value	Result	Species	Sex
Oral			Indeterminate	Rat	

Reproductive toxicity

Based on available data the classification criteria are not met.

Ethanol

	Parameter	Value	Result	Species	Sex
Developmental toxicity	NOAEL	38 mg/l	Negative	Rat	
	NOAEL	5200 mg/kg/24hour	Indeterminate	Rat	

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date 07th February 2020
Revision date Version 1.0

Toxicity for specific target organ - single exposure

Based on available data the classification criteria are not met.

Ethanol

Route of exposure	Parameter	Value	Time of exposure	Specific target organ	Result	Species	Sex
Inhalation	LOAEL	2.6 mg/l	30 min	Nervous system	Drowsiness, Dizziness	Human	
Inhalation	LOAEL	9.4 mg/l		Lungs	Indeterminate	Human	

Toxicity for specific target organ - repeated exposure

Based on available data the classification criteria are not met.

isopropanol

Route of exposure	Parameter	Value	Time of exposure	Specific target organ	Result	Species	Sex
Inhalation	NOAEL	12.3 mg/l	24 month	Kidney	Indeterminate	Rat	
Inhalation	NOAEL	12 mg/l	13 week	Nervous system	Negative	Rat	
Oral	NOAEL	400 mg/kg/24hour	12 week	Kidney	Indeterminate	Rat	

Aspiration hazard

Inhalation of solvent vapors above values exceeding exposure limits for working environment may result in acute inhalation poisoning, depending on the level of concentration and exposure time. Based on available data the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity

Data for the mixture are not available.

butanone

Parameter	Value	Time of exposure	Species	Environment	Determining method
LC50	3220 mg/kg	96 hour	Fishes (Oncorhynchus mykiss)		
EC50	5090 mg/kg	48 hour	Daphnia (Daphnia magna)		
IC50	>4300 mg/kg		Algae (Selenastrum capricornutum)		

Denatonium benzoate

Parameter	Value	Time of exposure	Species	Environment	Determining method
LC50	1000 mg/kg	96 hour	Fishes (Oncorhynchus mykiss)		

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date 07th February 2020
Revision date Version 1.0

Ethanol

Parameter	Value	Time of exposure	Species	Environment	Determining method
EC50	42 mg/l	96 hour	Fishes		Experimentally
EC50	5012 mg/l	48 hour	Daphnia		Experimentally
NOEC	<500 mg/l	96 hour	Algae		Experimentally
NOEC	=9.6 mg/l	11 day	Daphnia		Experimentally

isopropanol

Parameter	Value	Time of exposure	Species	Environment	Determining method
LC50	>100 mg/l	96 hour	Fishes		
EC50	>100 mg/l	48 hour	Daphnia		
NOEC	30 mg/l	21 day	Daphnia		Experimentally
EC50	1400 mg/l	48 hour	Crustaceans		Experimentally
EC50	>1000 mg/l	24 hour	Algae		Experimentally
IC50	>100 mg/l	72 hour	Algae		

12.2. Persistence and degradability

Biodegradability

isopropanol

Parameter	Value	Time of exposure	Environment	Determining method	Result
		14 day		Experimentally	

Data not available.

12.3. Bioaccumulative potential

Ethanol

Parameter	Value	Time of exposure	Species	Environment	Surrounding temperature [°C]
		28 day			

Not available.

12.4. Mobility in soil

Not available.

12.5. Results of PBT and vPvB assessment

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

12.6. Other adverse effects

Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	07th February 2020	Version	1.0
Revision date			

Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended.
Decision 2000/532/EC establishing a list of wastes, as amended.

SECTION 14: Transport information

14.1. UN number

UN 1170

14.2. UN proper shipping name

ETHANOL

14.3. Transport hazard class(es)

3 Flammable liquids

14.4. Packing group

II - substances presenting medium danger

14.5. Environmental hazards

not available

14.6. Special precautions for user

not available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not available

Additional information

Hazard identification No.	33 (Kemler Code)
UN number	1170
Classification code	F1
Safety signs	3



Air transport - ICAO/IATA

Packaging instructions passenger	353
Cargo packaging instructions	364

Marine transport - IMDG

EmS (emergency plan)	F-E, S-D
MFAG	305

SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16th December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006, as amended.

15.2. Chemical safety assessment

not available

SECTION 16: Other information

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	07th February 2020	Version	1.0
Revision date			

A list of standard risk phrases used in the safety data sheet

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

Guidelines for safe handling used in the safety data sheet

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.

Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
DNEL	Derived no-effect level
EC	Identification code for each substance listed in EINECS
EC50	Concentration of a substance when it is affected 50% of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
EU	European Union
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
IC50	Concentration causing 50% blockade
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC50	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD50	Lethal dose of a substance in which it can be expected death of 50% of the population
LOAEC	Lowest observed adverse effect concentration
LOAEL	Lowest observed adverse effect level
log Kow	Octanol-water partition coefficient
MARPOL	International Convention for the Prevention of Pollution From Ships
NOAEC	No observed adverse effect concentration
NOAEL	No observed adverse effect level
NOEC	No observed effect concentration
NOEL	No observed effect level
OEL	Occupational Exposure Limits
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted no-effect concentration
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Ethanol denatured (Euro denaturation)

Creation date	07th February 2020	Version	1.0
Revision date			

UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bioaccumulative

Acute Tox.	Acute toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquid
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

not available

Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended.
REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

More information

Classification procedure - calculation method.

Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.