SAFETY DATA SHEET

according to Commission Regulation (EU) 2020/878 as amended

Collodion flexible USP 32

Creation date	02nd September 2020	Version	7.0
Revision date	13th April 2026		

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

1.1. Product identifier — Collodion flexible USP 32

Substance / mixture — mixture

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

Mixture's intended use

medicine, pharmacy
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 number	CZ02096013
Phone	+420 226 060 681
Email	info@pentachemicals.eu
Web address	www.pentachemicals.eu

Competent person responsible for the safety data sheet

Name	Ing. Petr Švec - PENTA s.r.o.
Email	info@pentachemicals.eu

1.4. Emergency telephone number

European emergency number: 112 112

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. 1, H224
Acute Tox. 4, H302
STOT SE 3, H336

Most serious adverse physico-chemical effects

Extremely flammable liquid and vapour.

Most serious adverse effects on human health and the environment

Harmful if swallowed. May cause drowsiness or dizziness.

2.2. Label elements

Hazard pictogram

Signal word

Danger

Hazardous substances

diethyl ether
Camphor

Hazard statements

H224 Extremely flammable liquid and vapour.

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H302	Harmful if swallowed.
H336	May cause drowsiness or dizziness.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243	Take action to prevent static discharges.
P403+P235	Store in a well-ventilated place. Keep cool.

Supplemental information

EUH019	May form explosive peroxides.

2.3. Other hazards

The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. 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. Does not contain any PMT or vPvM components.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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: 603-022-00-4 CAS: 60-29-7 EC: 200-467-2 Registration number: 01-2119535785-29-0001	diethyl ether	65	Flam. Liq. 1, H224 Acute Tox. 4, H302 STOT SE 3, H336 EUH019 EUH066	1, 2
Index: 603-002-00-5 CAS: 64-17-5 EC: 200-578-6 Registration number: 01-2119457-610-43-xxxx	ethanol	<24	Flam. Liq. 2, H225 Eye Irrit. 2, H319 Specific concentration limit: Eye Irrit. 2, H319: C ≥ 50 %	
CAS: 76-22-2 EC: 244-350-4	Camphor	<2	Flam. Sol. 2, H228 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	

Notes

1 *A substance for which exposure limits are set.*

2 *Drug precursor*

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. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

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 or 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.

If swallowed

Rinse out the mouth with water and provide 0.2-0.5 L of water. Provide medical treatment.

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

Not expected.

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. Extremely flammable liquid and vapour. Remove all ignition sources. Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Do not inhale mist/vapours/spray. 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.

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. Do not inhale mist/vapours/spray. Prevent contact with skin and eyes. No smoking. Wash hands and exposed parts of the body thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. 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 action to prevent static discharges.

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. Store locked up. Keep container tightly closed. Keep cool.

Storage temperature max.15 °C

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 **Commission Directive 2000/39/EC**

Substance name (component)	Type	Value
diethyl ether (CAS: 60−29−7)	OEL 8 hours	308 mg/m³
	OEL 8 hours	100 ppm
	OEL 15 minutes	616 mg/m³
	OEL 15 minutes	200 ppm

8.2. Exposure controls

Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. If exposure limits cannot be observed in this mode, suitable protection of airways must be used. 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.

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Skin protection

Hand protection: Protective gloves resistant to the product. When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. Other protection: Protective antistatic clothing made of natural fibres (cotton) or synthetic fibres resistant to elevated temperatures. Antistatic footwear. Contaminated skin should be washed thoroughly.

Glove material	Thickness	Breakthrough time	Class
Butyl rubber (IIR)	≥ 0.3 mm	>480 min	6

Respiratory protection

Halfmask with a filter against organic vapours in the 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

Physical state	liquid
Colour	colourless
Odour	characteristic
Melting point/freezing point	data not available
Boiling point or initial boiling point and boiling range	34 °C
Flammability	data not available
Lower and upper explosion limit	data not available
Flash point	-40 °C
Auto-ignition temperature	data not available
Decomposition temperature	data not available
pH	data not available
Kinematic viscosity	data not available
Solubility in water	data not available
Partition coefficient n-octanol/water (log value)	data not available
Vapour pressure	data not available
Density and/or relative density	
Density	0.777 g/cm³ at 20 °C
Relative vapour density	data not available
Particle characteristics	data not available

9.2. Other information

not available

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SECTION 10: Stability and reactivity

10.1. Reactivity

not available

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Unknown.

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.

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 hazard classes as defined in Regulation (EC) No 1272/2008

Hazardous substances in concentrations exceeding exposure limits may cause acute inhalation poisoning, depending on the concentration and duration of exposure. No toxicological data is available for the mixture.

Acute toxicity

Harmful if swallowed.

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Route of exposure	Parameter	Value	Exposure time	Species	Sex	Value determination
Oral	ATE	1734 mg/kg				Calculation of value

Camphor						
Route of exposure	Parameter	Value	Exposure time	Species	Sex	Value determination
Oral	LD_{50}	>5000 mg/kg		Rat		

diethyl ether						
Route of exposure	Parameter	Value	Exposure time	Species	Sex	Value determination
Oral	LD_{50}	1211 mg/kg		Rat (Rattus norvegicus)		
Dermal	LD_{50}	>2000 mg/kg		Rabbit		
Inhalation (vapor)	LC_{50}	31000 ppm	30 minutes	Mouse		

ethanol						
Route of exposure	Parameter	Value	Exposure time	Species	Sex	Value determination
Oral	LD_{50}	13300 mg/kg		Rat (Rattus norvegicus)		
Dermal	LD_{50}	>15800 mg/kg		Rabbit		
Inhalation (vapor)	LC_{50}	124.7 mg/l	4 hours	Rat (Rattus norvegicus)		

Skin corrosion/irritation

Data for the mixture are not available. Based on the available data, the criteria for classification of the mixture are not met.

Corrosivity

ethanol			
Route of exposure	Result	Exposure time	Species
	No effect		Rabbit

Serious eye damage/irritation

Data for the mixture are not available. Based on the available data, the criteria for classification of the mixture are not met.

ethanol			
Route of exposure	Result	Exposure time	Species
	Irritating		Rabbit

Respiratory or skin sensitisation

Data for the mixture are not available. Based on the available data, the criteria for classification of the mixture are not met.

ethanol				
Route of exposure	Result	Exposure time	Species	Sex
	Indeterminate		Human	

Germ cell mutagenicity

Data for the mixture are not available. Based on the available data, the criteria for classification of the mixture are not met.

ethanol				
Result	Exposure time	Specific target organ	Species	Sex
Indeterminate				

Carcinogenicity

Data for the mixture are not available. Based on the available data, the criteria for classification of the mixture are not met.

ethanol					
Route of exposure	Parameter	Value	Result	Species	Sex
Oral			Indeterminate	Rat (Rattus norvegicus)	

Reproductive toxicity

Data for the mixture are not available. Based on the available data, the criteria for classification of the mixture are not met.

ethanol						
Effect	Parameter	Value	Exposure time	Result	Species	Sex
Developmental toxicity	NOAEL	38 mg/l		Negative	Rat (Rattus norvegicus)	
	NOAEL	5200 mg/kg	24 hours	Indeterminate	Rat (Rattus norvegicus)	

Toxicity for specific target organ - single exposure

May cause drowsiness or dizziness.

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

Toxicity for specific target organ - repeated exposure

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

Aspiration hazard

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

11.2. Information on other hazards

Endocrine disrupting properties

Based on the available data, the criteria for classification of the mixture are not met. Does not contain any components that may cause endocrine disruption for humans.

Other information

not available

SECTION 12: Ecological information

12.1. Toxicity

Data for the mixture are not available. Based on the available data, the criteria for classification of the mixture are not met.

Acute toxicity

diethyl ether					
Parameter	Value	Exposure time	Species	Environment	Value determination
LC_{50}	2560 mg/l	96 hours	Fish		
EC_{50}	165 mg/l	24 hours	Daphnia (Daphnia magna)		
IC_{50}	>100 mg/l	72 hours	Algae		

ethanol					
Parameter	Value	Exposure time	Species	Environment	Value determination
EC_{50}	42 mg/l	96 hours	Fish		Experimentally
EC_{50}	5012 mg/l	48 hours	Daphnia		Experimentally
NOEC	<500 mg/l	96 hours	Algae		Experimentally

Chronic toxicity

diethyl ether				
Parameter	Value	Exposure time	Species	Environment
	>100 mg/l	21 days	Daphnia (Daphnia magna)	

12.2. Persistence and degradability
No data are available for either the mixture or the components.

12.3. Bioaccumulative potential
No data are available for either the mixture or the components.

12.4. Mobility in soil
Based on the available data, the criteria for classification of the mixture are not met. Does not contain any PMT or vPvM components.

12.5. Results of PBT and vPvB assessment
Based on the available data, the criteria for classification of the mixture are not met. Does not contain any PBT or vPvB components. 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. Endocrine disrupting properties
Based on the available data, the criteria for classification of the mixture are not met. Does not contain any components that may cause endocrine disruption in the environment.

12.7. 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. 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. Perfectly cleaned containers can be submitted for recycling.

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 or ID number
UN 1263

14.2. UN proper shipping name
PAINT

14.3. Transport hazard class(es)
3 Flammable liquids

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14.4. Packing group

I

14.5. Environmental hazards

not relevant

14.6. Special precautions for user

not available

14.7. Maritime transport in bulk according to IMO instruments

not relevant

Additional information

Hazard identification No.	**33**
UN number	**1263**
Classification code	F1
Safety signs	3

Tunnel restriction code	(D/E)

Air transport - ICAO/IATA

Packaging instructions passenger	351
Cargo packaging instructions	361

Marine transport - IMDG

EmS (emergency plan)	F-E, S-E
MFAG	310

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 as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

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

EUH019	May form explosive peroxides.
EUH066	Repeated exposure may cause skin dryness or cracking.
H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H228	Flammable solid.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

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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.
P243	Take action to prevent static discharges.
P403+P235	Store in a well-ventilated place. Keep cool.

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

Acute Tox.	Acute toxicity
ADR	Agreement concerning the international carriage of dangerous goods by road
ATE	Acute toxicity estimate
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC	Identification code for each substance listed in EINECS
EC_{50}	Concentration of a substance when it is affected 50 % of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EU	European Union
EuPCS	European Product Categorisation System
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquid
Flam. Sol.	Flammable solid
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
IC_{50}	Concentration causing 50% blockade
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC_{50}	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD_{50}	Lethal dose of a substance in which it can be expected death of 50% of the population
LOAEL	Lowest observed adverse effect level
log Kow	Octanol-water partition coefficient
NOAEL	No observed adverse effect level
NOEC	No observed effect concentration
OEL	Occupational Exposure Limits
PBT	Persistent, bioaccumulative and toxic
PMT	Persistent, mobile and toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulation concerning the International Carriage of Dangerous Goods by Rail
Skin Irrit.	Skin irritation

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STOT SE	Specific target organ toxicity - single exposure
UN number	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
vPvM	Very persistent and very mobile

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.

The changes (which information has been added, deleted or modified)

The version 7.0 replaces the SDS version from Friday, 28 March 2025. Changes were made in sections 2, 13, 15 and 16.

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.