

(±)-Cannabichromene, synthesized

HS Code:	2907 29 – Phenols; phenol-alcohols
IUPAC Name:	2-Methyl-2-(4-methylpent-3-en-1-yl)-7-pentylchroman-5-ol
CAS No.:	20675-51-8
EC-No.:	809-024-3
Substance origin:	chemical synthesis
Use:	This product is intended for research and forensic applications
Solubility:	Alcohols, Alkanes, Aromatic hydrocarbon, Chlorinated solvents,
	Polar aprotic solvents; Not soluble in water

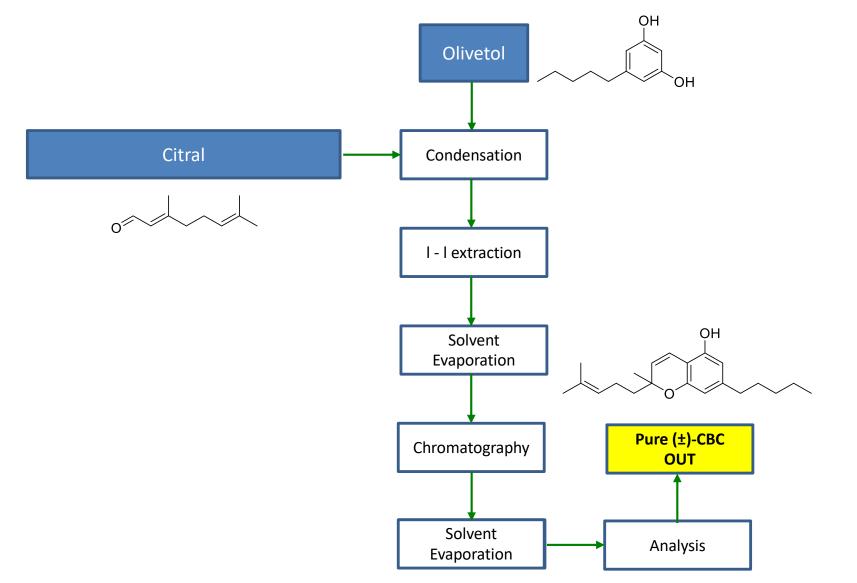
Parameter	Limit	Unit	Method	
Appearance	yellowish oil	-	Visual	
Identity	Corresponds to the IR reference spectrum	-	IR spectroscopy (Ph.Eur. 2.2.24)	
Sulphate Ash	≤ 0.1	%	Sulphate ash (Ph.Eur. 2.4.14)	
Loss on drying	≤ 0.5	%	Los on drying (Ph.Eur. 2.2.32)	
ASSAY				
Cannabichroimene (CBC)	98.0-102.0	%	Ph.Eur. 2.2.29	
	RELATED SUBSTANCES			
Cannabinol (CBN)	n.d.			
Δ9-tetrahydrocannabinol (Δ9-THC)	n.d.	-		
Δ8-tetrahydrocannabinol (Δ8-THC)	n.d.	%		
Cannabicitran	≤ 0.1	%	Ph.Eur. 2.2.29	
2-methyl-2-(4-methylpent-3-en-1-yl)-5- pentylchroman-7-ol	≤ 0.1	-		
RESIDUAL SOLVENTS				
Σ(Toulene, n-Heptane, Ethyl acetate)	≤ 0.5	%	Ph.Eur. 2.4.24	
HEAVY METALS				
Cadmium (Cd)	<0.1			
Lead (Pb)	<0.1	mg/kg	GC-MS-ICP	
Arsenic (As)	<0.1		(Accreditation method)	
Mercury (Hg)	<0.01	mg/kg	AAS	

Packaging: Shelf life: MOQ: HDPE jar, glass vial

24 months from date of production in dark place at room temperature. 0.1g as bulk

Synthetic (±)-Cannabichromene Flow Chart





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

Trade name:	(±)-Cannabichromene, synthesized
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SECTION 1: Identification of the substance and of the company/undertaking

1.1 Product identifier: 2-Methyl-2-(4-methylpent-3-en-1-yl)-7-pentylchroman-5-ol

Substance name (IUPAC) CAS No. Index No. EC / List No. HS code: Other names of the substance REACH No. 2-Methyl-2-(4-methylpent-3-en-1-yl)-7-pentylchroman-5-ol 20675-51-8 n.a. 809-024-3 2907 29 - Phenols; phenol-alcohols (±)-Cannabichromene, Cannabichromene, CBC the substance has not been registered yet because quantities manufactured or imported and liable to registration are under 1 mt/year.

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

Relevant identified usesfor research and forensic applicationsUses advised against:not for food.

1.3 Details of the supplier of the safety data sheet:

Supplier:	
Name	PharmaCan s.r.o.
Address	Kvapilova 927/14
	CZ-15000 Praha 5
	Czech Republic
Information contact phone	+421 773 137 973
E-Mail (competent person)	jan.storch@pharmacan.cz

1.4 EMERGENCY TELEPHONE NUMBER:

for the United Kingdom:

The National Poisons Information Service does not accept enquiries from the public but supports the National Health Service (NHS) **in England**, **Wales**, **and Scotland** to answer such queries: **Dial: Tel.** (+44) **111**,

or in Wales NHS Direct, Tel. 0845 4647. In Northern Ireland: Contact your local GP or pharmacist during normal hours; click <u>here</u> (<u>www.gpoutofhours.hscni.net/</u>) for GP services Out-of-Hours.

In Republic of Ireland:

contact NPIC on **(01) 809 2166** (8 am to 10 pm); outside of these hours contact your GP or hospital emergency department.

In **Czech Republic** (country of substance origin): Toxicological Information Centre, Na Bojisti 1, CZ-12000 Prague, Emergency phone: **+420 224 91 92 93 or +420 224 91 54 02** website: www.tis-cz.cz

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SECTION 2: Hazards identification

2.1. Classification of the substance:

Classification according to Regulation (EC) No 1272/2008 [CLP]	Classification procedure
Not classified	On basis of animal test data with the main constituent Cannabichromene (scientific publications). No
	harmonised classification acc. to Regulation (EC) No 1272/2008 [CLP], Part 3, Annex VI.

2.2 Label elements / Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS] Hazard pictograms: none

Hazard statements: none

Precautionary statements: none

2.3 Other hazards

The substance does not meet the criteria for PBT or vPvB substances in accordance with Annex XIII of Regulation (EC) No 1907/2006 [REACH].

SECTION 3. Composition/information on ingredients

3.1 Substances

Constituents of the substance:

Constituents	Conc.	EC-Nr.	CAS-No.	Registra- tion-No.	Classification according to Regulation (EC) No 1272/2008 [CLP]
2-Methyl-2-(4- methylpent-3-en-1- yl)-7-pentylchroman- 5-ol	≥ 98.0 %	809-024-3	20675-51-8	not registered	No harmonised entry in Part 3, Annex VI.

SECTION 4: First aid measures

4.1 Description of first aid measures

In case of exposure of clothes to product, remove contaminated clothes. Details see below.

General information

In case of any health problems after product contact (eyes, skin, aspiration, ingestion) consult a medical doctor and show him/her this Safety Data Sheet.

Following inhalation

Remove affected person to fresh air. Rinse mouth and throat with plenty of water. Provide medical treatment if irritation, dyspnoea / shortness of breath or other symptoms should persist.

Following skin contact

Remove contaminated clothes. Wash contaminated areas with plenty of water and liquid soap (save the eyes) and rinse off with plenty of water.

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Following eye contact

Rinse eyes immediately with the eye douche or with a flow of running water, open the eyelids (also if force is needed), and continue rinsing for further 10 minutes. Remove contact lenses if any. Provide medical treatment if eye symptoms persist.

Following ingestion

Rinse mouth and throat with plenty of water. Drink plenty of water. If person feels unwell seek medical advice immediately and provide this Safety Data Sheet.

Self-protection of the first aider:

In case larger amounts of product should have escaped protect yourself with a respiratory mask and rubber gloves. Take off contaminated clothes after first aid and wash /shower yourself with plenty of water and liquid soap.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation: cough, shortness of breath.

<u>Skin contact</u>: on long-term exposition there may be slight irritation of affected areas. <u>Eye contact</u>: there may be irritation, redness, itching, and tears.

Ingestion: there may be irritation with small amounts. Large amounts could cause nausea, vomiting, and irritation of the throat.

4.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor

The substance is lipophilic and nearly not soluble in water. In order to prevent extended absorption of CBC in the digestive tract after oral uptake, the patient should refrain from eating any fats or oils for at least 24 hours after ingestion.

By now there are no human toxicity studies on CBC. There is no animal study on acute oral toxicity either. The only study on oral toxicity with female mice (50 mg CBC / kg*bw) on postnatal effects on offspring did not show any effects or changes from control values.

If any treatment is needed, this should be symptomatic.

Detoxification in the body occurs mainly by oxidation / hydroxylation of Cannabichromene at various positions of the molecule through liver microsomes.

SECTION 5: Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Foam, Carbon dioxide, powder, water jet spray, water mist.

<u>Unsuitable extinguishing media</u> A massive water stream may be inefficient.

5.2 Special hazards arising from the substance on fire

Hazardous combustion products

Heavy, black smoke is produced in a fire, with potential production of carbon monoxide and carbon dioxide (immediately toxic gases). Inhalation of hazardous degradation products (such as small soot particles from pyrolysis) may cause serious health damage (fume poisoning).

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5.3 Advice for fire-fighters

Use a self-contained breathing apparatus (acc. to EN 137) and full-body protective clothing. Do not allow for run-off of waste water from fire extinguishing to enter the drains or the soil or ground water.

Additional information

The substance is an organic oily compound with a carbon content of approx. 80 %. Flashpoint is over 100°C. Depending on air inflow it may support combustion.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

<u>Protective equipment</u>: wear light protective suit (for example, Tyvek Protech®, Model Classic), gloves, and a respiratory mask (filter ABEK).

<u>Emergency procedures</u>: Avoid inhaling vapours of the oil or warm liquid, and provide adequate ventilation (e.g. local exhaust ventilation). Go to fresh air.

For emergency responders

<u>Personal protective equipment</u>: wear self-contained breathing apparatus, or respirator, and appropriate personal protective suit (chemical splash suit), rubber boots, rubber gloves, safety goggles.

6.2 Environmental precautions

Take steps to avoid release into the environment (air, soil, water drains), if safe to do so.

6.3 Methods and material for containment and cleaning up

Spilled product should be covered with suitable (non-flammable) absorption material (e.g. sand, diatomaceous earth or other, Hybilat®); to be contained in well closed containers and removed as per Section 13. Collected material should be disposed of in accordance with locally valid regulations.

Upon escape of large amounts of product inform the Fire Department and the Environmental Department of the Municipal Authority.

For containment: use drums with wide lid, tension lock, and plastic inliner. **For cleaning up:** after removal of the spilled product use plenty of water and soap for emulsification (no solvents !).

6.4 Reference to other sections: see Sections 7, 8, and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

<u>Advice on safe handling:</u> Prevent contact with skin and eyes, do not inhale. The product should be handled in areas only without open fire or ignition sources. Handle small amounts of product under a well ventilated hood. Use personal protective equipment as per Section 8.

Advice on general occupational hygiene

- Don't eat, drink or smoke in areas where the substance is handled or processed.
- After handling of the substance wash hands with water and liquid soap, and apply skin protection cream on hands.

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• Take off contaminated clothes or protective suits (even if apparently clean) before entering / using social rooms, rest rooms, canteens, etc.

Environmental precautions: see Section 7.2.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Always keep substance in original containers and keep them closed after handling. Protect the substance against direct sun light and heat; keep it in tightly closed containers in a dark, cool, and dry place.

<u>Fire preventions:</u> The substance should only be stored in areas without open fire or ignition sources.

<u>Packaging materials</u>: any containers made of glass, polyethylene (PE), polypropylene (PP), Polyamide (PA), Polytetrafluoroethylene (PTFE), ceramics, stainless steel, with wide opening (for solids handling) and tight seals. Use food compatible packaging materials throughout for the uses indicated in Section 1.2.

Storage class: for Germany: 10 (acc. to TRGS 510).

<u>Materials to avoid:</u> avoid contact with strong bases (alkaline substances), with strong acids, and with oxidising agents.

7.3 Specific end uses

For the identified use(s) referred to in subsection 1.2: store the substance separately from acutely toxic substances or acutely toxic mixtures.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits:

There are no established occupational exposure limits for the substance or the main constituent Cannabichromene.

DNEL/PNEC-values:

There are no established values for Cannabichromene.

8.2 Exposure controls

Follow the usual procedures for occupational health protection (see below).

Appropriate engineering controls

Uses process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits for inhalable vapours.

Personal protective equipment

<u>Larger amounts of product</u>: to be handled only with local exhaust ventilation on site, rubber boots, rubber apron (or chemical splash suit), and full face protection (face shield).

Eye / face protection

Wear standard safety goggles (with side protection, acc. to EN 166).

Skin protection

Hand protection: protective gloves

By short-term hand contact: disposable gloves made of natural rubber-latex, or latex-free rubber, wear duration max. 20 minutes.

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By long-term hand contact: protective gloves made of nitrile rubber (thickness 0.4 mm, breakthrough-time > 120 minutes) or type B acc. to EN ISO 374-1:2016.

<u>Body protection:</u> lab coat for handling of small amounts of substance under a hood or with efficient local exhaust ventilation.

In other cases wear light protective suit (for example, Tyvek Protech®, Model Classic). <u>Other skin protection measures:</u> apply hand protective cream after washing hands.

<u>Respiratory protection</u>: none for handling of substance under a hood or with efficient local exhaust ventilation. In a poorly ventilated environment wear respiratory mask for handling of the oil.

Thermal hazards: none.

Environmental exposure controls:

Take steps to avoid release into the environment (air, soil, water drains), if safe to do so. Control and change filters or absorption fluids of ventilation or absorption systems on a regular basis, and provide for disposal of contents / containers to an authorised chemical waste disposal contractor only.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: yellowish oil.

Parameter	Value	Conditions /Method	Remark
pH	not available		
Solidification point	not available		
Boiling point / boiling range	429 ± 45°C	1013 mbar	estimated
Flash point	>100°C		
Evaporation rate	not available		
Flammability (solid, gas)	not readily combustible	screening test	
Upper/lower flammability or explosive limits	n.a.		
Vapour pressure	< 0.1 mbar	at 25°C	estimated
Vapour density	not available		
Relative density	0.99 kg/L	at 20°C	experimental
Solubility(ies)			see Section 9.2
Partition coefficient: n-Octanol / water	7.98		Estimated (EPISuite™)
Auto-ignition temperature	not available		
Decomposition temperature	not available		
Viscosity	not available		
Explosive properties	none		
Oxidising properties	none		

9.2 Other Information

<u>Solubilities:</u> practically insoluble in water, soluble in Ethanol, Methanol, hydrocarbons. Water solubility estimate (from Fragment Method): 0.017 mg/L (EPISuite[™]).

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SECTION 10: Stability and reactivity

10.1 Reactivity

With strong acids Cannabichromene reacts to give a complex mixture of cannabinoids.

10.2 Chemical stability

The product is stable at low temperatures (around 0°C) and in the dark. Cannabichromene is unstable under influence of light, easily being converted to Cannabicyclol.

10.3 Possibility of hazardous reactions

The product is stable under normal conditions.

10.4 Conditions to avoid:

Avoid direct exposure to sun and light or strong heat.

10.5 Incompatible materials:

Protect against strong acids, strong bases, and oxidising agents.

10.6 Hazardous decomposition products: None under normal conditions

SECTION 11: Toxicological information

11.1 Information on toxicological effects

(a) <u>Acute toxicity</u>

There are no data available on acute oral toxicity for this substance.

There are no data on acute inhalative toxicity of this substance.

There are no data on human acute dermal toxicity. There is one endpoint on dermal toxicity for the mouse: TDL₀ 767 mg/kg body weight.

Assessment / Classification: The substance does not meet the criteria for acute toxicity.

(b) <u>Skin corrosion/irritation</u>

Practical experience / human evidence

Based on available data the substance is not corrosive or irritating on the skin. **Assessment / Classification:** Classification criteria are not met.

(c) <u>Serious eye damage / irritation</u>

The substance does not cause serious eye damage or irritation. Ocular toxicity was not apparent at the cornea of cats, and Cannabichromene did not alter intraocular pressure either acutely or during 9 days of chronic administration *(Colasanti et al., 1984)*.

Assessment / Classification: Based on available data, the classification criteria are not met.

(d) <u>Respiratory or skin sensitisation</u>

Based on practical experience the substance does not cause sensitisation to the skin or the respiratory tract.

Assessment / Classification: Based on available data, the classification criteria are not met.

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CMR effects (Cancerogenity, Mutagenicity and toxicity for Reproduction)

(e) There is only one datum available on CMR effects of this substance.

In vitro mutagenicity/genotoxicity of Cannabichromene:

Cell type / Organism	Genetic Endpoint	Result / Evaluation	Remark
Human lymphocyte, in vitro	DNA inhibition, 100 µmol/l	positive	FEPRA 36, 1748 (1977), as reported in RTECS DJ2930000

Assessment / Classification: No evidence in animals or humans in vivo; lack of sufficient data for classification in category 2. Classification criteria are not met.

(f) <u>Carcinogenicity</u>

Assessment / **Classification:** there are no reports on carcinogenic effects of this substance. Classification criteria are not met.

(g) <u>Reproductive toxicity</u>

Animal data on this substance (Cannabichromene, CBC):

Method / Assessment	Exposure route	Exposure duration	Effect dose /Value	Species	Result /Evaluation	Remark
Viability of pups and on male reproductive system at maturity	CBC oral	7 days, beginning on 20th day of gestation	50 mg/kg	female mice	No changes from control: postnatal viability, male reproductive behaviour at maturity and seminal vesicle weights all in normal range.	N.S. Hatoum et al. (1981)

Assessment / Classification: Cannabichromene does not exert effects of reproductive toxicity. Classification criteria are not met.

(h) <u>Specific target organ toxicity, single exposure (STOT SE 1 and 2)</u>

Animal data on oral toxicity of Cannabichromene (single exposure):

Effect dose /- concentration	Value	Exposure duration	Species	Method	Specific effects	Organs affected	Remark
LD50	113 mg/kg	once	mice	Administration route: intraperitoneal	Behavioural: somnolescence (general depressed activity), changes in motor activity, ataxia. Function: hypothermia	No morpholo gical changes	N.S. Hatoum et al. (1981)
LD50	270 mg/kg of CBC (95 % pure)	once	Monkey (Macaca mulatta), both sexes	Administration route: intravenous	Behavioural: muscle contraction or spasticity; cardiac: arrhythmias; lungs, thorax or respiration: dyspnoea	Kidney oedema, nephrosis, necrosis	H. Rosen- krantz et al. (1981)
Non lethal dose	220 mg/kg of CBC (95 % pure)	once	Monkey (Macaca mulatta), both sexes	Administration route: intravenous	Focal subacute interstitial nephritis in females; reduced gonadal weights	see left	H. Rosen- krantz et al. (1981)
NOAEL	<180 mg/kg of CBC (95 % pure)	once	Monkey (Macaca mulatta), both sexes	Administration route: intravenous	Behaviour: normal. Slight increase in liver weight (no morphological or functional changes)	see left	H. Rosen- krantz et al. (1981)

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Effect dose /- concentration	Value	Exposure duration	Species	Method	Specific effects	Organs affected	Remark
Physiological effect doses	100 mg/kg/d of CBC (95 % pure)	once	mice	Administration route: intravenous	CBC produced locomotor suppression, catalepsy, and hypothermia compared to vehicle control mice. No deaths.	none	G.T. DeLong et al. (2010)
Physiological effect doses	30 mg/kg/d of CBC (95 % pure)	once	mice	Administration route: intravenous	CBC produced no significant effects on locomotor activity, catalepsy, antinociception or hypothermia.	none	G.T. DeLong et al. (2010)

Assessment: On extrapolation of the LD_{50} (given intravenously, for monkeys) to an oral toxicity with a factor of 20, there may be estimated an acute oral toxicity of approx. 5400 mg/kg which is beyond any category for classification (The factor had been derived by Thompson et al., 1974, Toxicol. Appl. Pharmacol. **27**, 648-665).

Classification: Cannabichromene does not meet the criteria for STOT SE1 or SE2.

Narcotic effects

Cannabichromene is not listed in the Single Convention on Narcotic Drugs, UN, 1961. Cannabichromene (CBC) does not exert narcotic effects.

Assessment / Classification: CBC is not a narcotic substance.

(i) Specific target organ toxicity, repeated exposure (STOT RE 1 and 2)

Animal data on oral toxicity of Cannabichromene (repeated exposure): Inhalation toxicity:

Effect dose /- concentration	Value	Exposure duration	Species	Method	Specific effects	Organs affected	Remark
LD50, estimated	35 mg/kg/d	17 - 25 d (5 d/week)	Rat (Fischer)	Exposure to smoke of "CBC-marihuana" from an automatic inhalator	Hypoactivity by 2nd week, haematological variations	interference in sperm maturation	H. Rosen- krantz, D.W. Hayden (1979)

Assessment: The study on inhalation of smoke is not taken into account because it has not been performed acc. to current OECD guidelines, and smoke additionally contains polycyclic aromatic hydrocarbons besides many other carcinogenic substances, nitric oxides, and free radicals.

Classification: Based on available data, the classification criteria for STOT RE1 or RE2 are not met.

(j) Aspiration hazard:

Practical experience / human evidence No data available.

Assessment / Classification Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1 Toxicity:

Aquatic toxicity

There are no experimental data on short-term or long-term aquatic toxicity of the substance. Cannabichromene is nearly insoluble in water. Therefore, accumulation in surface waters is not probable.

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Assessment / Classification: no classification because lack of data.

12.2 Persistence and degradability

There are no experimental data on persistence or biodegradability.

12.3 Bioaccumulative potential

There are no experimental data on bioaccumulative potential.

12.4 Mobility in soil

There are no experimental data on mobility in soil.

12.5 Results of PBT and vPvB assessment: not required (for Chemical Safety Report only).

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6 Other adverse effects: no data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Directive 2008/98/EC (Waste Framework Directive)

Non-hazardous (ANH) waste according to Directive 2008/98/EC and Commission notice on technical guidance on the classification of waste (2018/C 124/01).

Proceed in accordance with European and local valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for treatment and disposal in specially designed treatment facilities that have obtained a special permit as required under Articles 23 to 25 of the Waste Framework Directive, but also under other legislation such as the Landfill (Council Directive 1999/31/EC) and Industrial Emissions Directives (Directive 2010/75/EU).

Disposal operations: **D 10**: Incineration on land.

<u>Recovery operations</u>: **R 3**: Recycling / reclamation of organic substances which are not used as solvents.

Waste codes for the substance according to the European List of Wastes (LoW)

(Commission Decision 2014/955/EU):

07 06 99 "wastes not otherwise specified from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics" for Cannabichromene that cannot be recycled to the production process.

Waste codes for the packaging material according to LoW:

- 15 01 01 "paper and cardboard packing
- 15 01 02 "Plastic packing"
- **15 01 04** "metallic packing"
- 15 01 07 "glass packing".

For Czechia: see also Decree No. 93/2016 Coll. (Waste Catalogue).

Additional instructions:

- Do not empty unused product into drainage systems.
- The product must not be disposed of with municipal waste.
- Empty containers must be used at waste incinerators (if card board or plastic) to produce energy or deposited in a dump with appropriate classification.
- Perfectly cleaned containers may be submitted for recycling.

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SECTION 14: Transport Information

		Land transport (ADR/RID)	Inland waterway transport (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA- DGR)
14.1	UN No.	none	none	none	none
14.2	UN Proper shipping name	Not dangerous goods	Not dangerous goods	Not dangerous goods	Not dangerous goods
14.3	Transport hazard class(es)	n.a.	n.a.	n.a.	n.a.
	Hazard label(s)	none	none	none	none
14.4	Packing group	n.a.	n.a.	n.a.	n.a.
14.5	Environmental hazards	n.a.	n.a.	n.a.	n.a.

14.6 Special precautions for user: Reference in Sections 4. to 8.

The substance should be transported in well closed containers or drums in closed and clean trucks.

Protect from direct sun and heat during transport. Temperature during transport should not exceed 30°C.

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

SECTION 15: Regulatory information

15.1 EU regulations (other than those already given in this safety data sheet):

Authorisations and/or restrictions on use:

<u>Authorisations:</u> not required for professional use. <u>Restrictions on use:</u> none for professional use. <u>Restrictions of occupation</u>: none.

Other EU regulations:

Regulation (EU) 649/2012 (concerning the export and import of hazardous chemicals): n.a.

National regulations:

In UK, Cannabichromene is not controlled under the Misuse of Drugs Regulations (2001). The substance does not fall under the latter or under the Misuse of Drugs Act (1971, as amended), because the substance is not cannabis or cannabis resin or (a) cannabinol (derivative), and the substance is free from any THC (tetrahydrocannabinol).

15.2 Chemical Safety Assessment

For this substance a chemical safety assessment is not required.

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SECTION 16: Other information

16.1 Indication of changes:

This safety data sheet is the original version 1.0, dated 29th May, 2019.

16.2 Abbreviations and acronyms

ADR CAS CLP DNEL EC ECHA EN EU IATA-DGR IBC-Code	European Agreement concerning the International Carriage of Dangerous Goods by Road Chemical Abstracts Service Classification, Labelling, Packaging Derived No Effect Level European Community European Chemicals Agency European Norm European Union International Air Transport Association - Dangerous Goods Regulations International Code for the Construction and Equipment of Ships Carrying Dangerous
	Chemicals
ICAO-TI IMDG-Code	International Civil Aviation Organization - Technical Instructions International Maritime Code for Dangerous Goods
ISO	Norm of the International Standards Organization
MARPOL	Maritime Pollution Convention
LC	Lethal concentration
LD	Lethal dose
log K _{OW}	Octanol-water partition coefficient
n.a.	not applicable
n.d.	not determined
NOAEL	No Observed Adverse Effect Level
OECD	Organization for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative, and Toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation, and Authorisation of Chemicals
RID	Agreement on the Transport of Dangerous Goods by Rail
STOT	Specific Target Organ Toxicity (SE = Single Exposure, RE = Repeated Exposure)
TRGS	Technische Regeln Gefahrstoffe (Technical Rules for Hazardous Substances, Germany)
UN	United Nations, or: four-digit identification number of the substance or article taken from the
UVCB	UN Model Regulations Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile Organic Compounds
vPvB	very Persistent and very Bioaccumulative
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16.3 Training advice

Inform personnel involved in manufacturing, isolation, packaging, handling, storage and logistics on recommended ways of use, mandatory personal protective equipment, first aid, and prohibited uses of the substance.

16.4 Statement / Disclaimer

This safety data sheet provides information aimed at ensuring safety and occupational 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 substance for a particular application.