



Safety Data Sheet acc. to OSHA HCS

Printing date 02/02/2023

Revision date 02/02/2023

1 Identification

- **Product identifier**
- **Trade name: Phytocannabinoid Mixture 11 (CRM) (0.5 ml, 1 mg/ml)**
- **Article number:** 32841
- **Application of the substance / the mixture**
This product is for research use - Not for human or veterinary diagnostic or therapeutic use.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Cayman Chemical Co.
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108
USA
- **Information department:** Product safety department
- **Emergency telephone number:**
During normal opening times: +1 (734) 971-3335
US/CANADA: 800-424-9300
Outside US/CANADA: 703-741-5970

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 2 H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Toxic to Reproduction 2 H361-H362 Suspected of damaging fertility or the unborn child. May cause harm to breast-fed children.



GHS07

Acute Toxicity - Oral 4	H302	Harmful if swallowed.
Acute Toxicity - Dermal 4	H312	Harmful in contact with skin.
Acute Toxicity - Inhalation 4	H332	Harmful if inhaled.
Eye Irritation 2A	H319	Causes serious eye irritation.

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Aquatic Acute 3	H402	Harmful to aquatic life.
Aquatic Chronic 3	H412	Harmful to aquatic life with long lasting effects.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS02 GHS07 GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

Acetonitrile
Cannabinol
Cannabidiolic Acid
Δ9-THC

- **Hazard statements**

H225 Highly flammable liquid and vapor.
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
H319 Causes serious eye irritation.
H361-H362 Suspected of damaging fertility or the unborn child. May cause harm to breast-fed children.
H412 Harmful to aquatic life with long lasting effects.

- **Precautionary statements**

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dusts or mists.
P263 Avoid contact during pregnancy/while nursing.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P330 Rinse mouth.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P321 Specific treatment (see on this label).
P362+P364 Take off contaminated clothing and wash it before reuse.
P337+P313 If eye irritation persists: Get medical advice/attention.
P370+P378 In case of fire: Use CO₂, powder or water spray to extinguish.

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P403+P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 2
 Fire = 3
 Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



HEALTH 2 Health = 2
 FIRE 3 Fire = 3
 REACTIVITY 0 Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 75-05-8 RTECS: AL7700000	Acetonitrile	98.9%
CAS: 521-35-7 RTECS: HP8575000	Cannabinol	0.1%
CAS: 1244-58-2 RTECS: DG8577600	Cannabidiolic Acid	0.1%
CAS: 1972-08-3 RTECS: HP8225000	Δ 9-THC	0.1%
CAS: 13956-29-1 RTECS: VH1600000	Cannabidiol	0.1%
CAS: 23978-85-0	THCA-A	0.1%
CAS: 24274-48-4 RTECS: CZ9021720	Cannabidivarin	0.1%
CAS: 25654-31-3 RTECS: CZ8944848	Cannabigerol	0.1%
CAS: 31262-37-0 RTECS: HP8558000	Tetrahydrocannabivarin	0.1%

- **Other ingredients**

CAS: 5957-75-5 RTECS: HP8400000	Δ 8-THC	0.1%
CAS: 25555-57-1	Cannabigerolic Acid	0.1%

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(±)-Cannabichromene

0.1%

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
67-56-1 During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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· Protective Action Criteria for Chemicals

· PAC-1:		
75-05-8	Acetonitrile	13 ppm
· PAC-2:		
75-05-8	Acetonitrile	50 ppm
· PAC-3:		
75-05-8	Acetonitrile	150 ppm

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** Store in accordance with information listed on the product insert.
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

75-05-8 Acetonitrile	
PEL	Long-term value: 70 mg/m ³ , 40 ppm
REL	Long-term value: 34 mg/m ³ , 20 ppm
TLV	Long-term value: 20 ppm
	Skin, A4

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.

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Store protective clothing separately.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:

Liquid

Color:

According to product specification

· **Odor:**

Characteristic

· **Odor threshold:**

Not determined.

· **Formulation**

A solution in acetonitrile (1 mg/ml of each compound)

· **pH-value:**

Not determined.

· **Change in condition**

Melting point/Melting range:

-46 °C (-50.8 °F)

Boiling point/Boiling range:

81 °C (177.8 °F)

· **Flash point:**

5 °C (41 °F)

· **Flammability (solid, gaseous):**

Highly flammable.

· **Ignition temperature:**

525 °C (977 °F)

· **Decomposition temperature:**

Not determined.

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· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits:	
Lower:	4.4 Vol %
Upper:	16 Vol %
· Vapor pressure at 20 °C (68 °F):	97 hPa (72.8 mm Hg)
· Density at 20 °C (68 °F):	0.7822 g/cm ³ (6.52746 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic at 20 °C (68 °F):	0.39 mPas
Kinematic:	Not determined.
· Solvent content:	
VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal
Solids content:	0.8 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	506 mg/kg
Dermal	LD50	1,112 mg/kg
Inhalative	LC50/4 h	11.1 mg/l

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75-05-8 Acetonitrile		
Oral	TDLO	64 ml/kg (man)
	LD50	2,460 mg/kg (rat)
Dermal	LD50	980 mg/kg (rabbit)
Inhalative	LC50/4 h	7,551 mg/m ³ (rat)
	LC50	7,551 mg/m ³ /8h (rat)
	TCLO	160 mg/m ³ /4h (hmn)
Irritation of eyes	Irritation	100 µl/24 hr (rabbit)
	Irritation	100 il/24 hr (rabbit)
521-35-7 Cannabinol		
Oral	LD50	13,500 mg/kg (mouse)
	Intraperitoneal TDLO	150 mg/kg/3D intermittent (mouse)
1972-08-3 Δ9-THC		
Oral	LD50	482 mg/kg (mouse) 666 mg/kg (rat)
	Intraperitoneal LD50	168 mg/kg (mouse) 373 mg/kg (rat)
	Subcutaneous LD50	>11 g/kg (mouse)
13956-29-1 Cannabidiol		
Oral	LD50	13,500 mg/kg (mouse)
	TDLO	5.63 mg/kg (human) 5 mg/kg (rat)
	Intraperitoneal TDLO	5 mg/kg (rat)
25654-31-3 Cannabigerol		
	Intraperitoneal TDLO	5 mg/kg (rat)
31262-37-0 Tetrahydrocannabivarin		
	Intraperitoneal TDLO	3 mg/kg (mouse)
	Intravenous TDLo	0.3 mg/kg (mouse)

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** Irritating effect.

- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

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- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Harmful to aquatic organisms
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- | | |
|----------------------------------|--------------|
| · UN-Number | |
| · DOT, IMDG, IATA | UN1648 |
| · UN proper shipping name | |
| · DOT, IATA | Acetonitrile |
| · IMDG | ACETONITRILE |

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- **Transport hazard class(es)**

- **DOT**



- **Class** 3 Flammable liquids
- **Label** 3

- **IMDG, IATA**



- **Class** 3 Flammable liquids
- **Label** 3

- **Packing group**
- **DOT, IMDG, IATA**

II

- **Environmental hazards:** Not applicable.

- **Special precautions for user** Warning: Flammable liquids
- **Hazard identification number (Kemler code):** 33
- **EMS Number:** F-E,S-D
- **Stowage Category** B
- **Stowage Code** SW2 Clear of living quarters.

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

- **Transport/Additional information:**

- **DOT**
- **Quantity limitations** On passenger aircraft/rail: 5 L
On cargo aircraft only: 60 L

- **IMDG**

- **Limited quantities (LQ)** 1L
- **Excepted quantities (EQ)** Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

- **IATA**

- **Remarks:** When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

- **UN "Model Regulation":** UN 1648 ACETONITRILE, 3, II

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15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

- **Sara**

- **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

- **Section 313 (Specific toxic chemical listings):**

75-05-8 Acetonitrile

- **TSCA (Toxic Substances Control Act):**

75-05-8 Acetonitrile

ACTIVE

- **Hazardous Air Pollutants**

75-05-8 Acetonitrile

- **Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

75-05-8 Acetonitrile

CBD, D

- **TLV (Threshold Limit Value)**

75-05-8 Acetonitrile

A4

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- **Department issuing SDS:** Environment protection department.

- **Contact:** -

- **Date of preparation / last revision** 02/02/2023

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flammable Liquids 2: Flammable liquids – Category 2
Acute Toxicity - Oral 4: Acute toxicity – Category 4
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
Toxic to Reproduction 2: Reproductive toxicity – Category 2
Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

*** Data compared to the previous version altered.**

US