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Revision: 19.10.2022

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 27.12.2023

Version number 4 (replaces version 3)

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

· 1.1 Product identifier

· Trade name: Solvokleen X CP-E & AR-E

· Article number: 1894 · Registration number

A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.

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

No further relevant information available.

· Application of the substance / the mixture

Chemical for research, development, manufacturing, laboratory chemical for analysis.

· 1.3 Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Biosolve Chimie

20 Rue Roger Husson, 57260 Dieuze, France

Tel: +33 3 878 675 80/81/82/83/84/85 Email: info@biosolvechimie.com

Biosolve B.V.

Leenderweg 78, 5555 CE Valkenswaard, the Netherlands.

Tel: +31-(0)40-2071300 *Fax:*+31-(0)40-2048537

Email: info@biosolve-chemicals.com

· Further information obtainable from: Product safety department.

· 1.4 Emergency telephone number:

Contact list of appointed bodies for information relating to emergency health response, according to Art. 45(1) Reg. (EC) No 1272/2008.

See below section 16 or at https://poisoncentres.echa.europa.eu/home.

Help desk: http://echa.europa.eu/web/guest/support/helpdesks/national-helpdesks/list-of-national-helpdesks).

Data from: ECHA - EUROPEAN CHEMICALS AGENCY

For more information see section 16.

SECTION 2: Hazards identification

- · 2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008



Acute Tox. 4 H302 Harmful if swallowed.

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

- · 2.2 Label elements
- · Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

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· Hazard pictograms



- · Signal word Warning
- Hazard-determining components of labelling:

trans-dichloroethylene

· Hazard statements

H302 Harmful if swallowed.

H412 Harmful to aquatic life with long lasting effects.

· Precautionary statements

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

Rinse mouth. P330

P501 Dispose of contents/container in accordance with local/regional/national/international

regulations.

- · 2.3 Other hazards
- · Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- · 3.2 Mixtures
- · Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:		
CAS: 156-60-5	trans-dichloroethylene	50-75%
EINECS: 205-860-2	♦ Flam. Liq. 2, H225; ♦ Acute Tox. 4, H302; Acute Tox. 4,	
Index number: 602-026-00-3	H332; Aquatic Chronic 3, H412	
CAS: 406-58-6	1,1,1,3,3-pentafluorobutane	25-50%
ELINCS: 430-250-1	♦ Flam. Liq. 2, H225	
Index number: 602-102-00-6	-	

· Additional information: For the wording of the listed hazard phrases refer to section 16.

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SECTION 4: First aid measures

- 4.1 Description of first aid measures
- General information:

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; consult doctor in case of complaints.
- · After skin contact:
- Wash off with soap and water.
- Remove and wash contaminated clothing before re-use.
- If symptoms persist, call a physician.
- · After eye contact: Rinse opened eye for several minutes under running water.
- After swallowing: Call for a doctor immediately.
- · 4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

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

No further relevant information available.

SECTION 5: Firefighting measures

- · 5.1 Extinguishing media
- · Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.
- · 5.3 Advice for firefighters
- The product is not flammable.
- Vapours are heavier than air and may spread along floors.
- Risk of ignition.
- Vapours may form explosive mixtures with air.
- Hazardous decomposition products formed under fire conditions
- · Protective equipment: No special measures required.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation

Use respiratory protective device against the effects of fumes/dust/aerosol.

· 6.2 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.

Do not allow to enter sewers/surface or ground water.

· 6.3 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 section 13.

· 6.4 Reference to other sections

See Section 7 for information on safe handling.

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See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Avoid contact with skin and eyes.

Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smokung.

Use solvent-proof equipment.

- · Information about fire and explosion protection: No special measures required.
- 7.2 Conditions for safe storage, including any incompatibilities
- · Storage:
- Requirements to be met by storerooms and receptacles: Store only in the original receptacle.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: None.
- · 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- · 8.1 Control parameters
- Ingredients with limit values that require monitoring at the workplace:

1,1,1,3,3-pentafluorobutane

- Acceptable Exposure Limit

TWA = 1,000 ppm

trans-Dichloro ethylene

- UK. EH40 Workplace Exposure Limits (WELs) 2007

 $time\ weighted\ average=200\ ppm$

time weighted average = 806 mg/m3

- UK. EH40 Workplace Exposure Limits (WELs) 2007

Short term exposure limit = 250 ppm

Short term exposure limit = 1,010 mg/m3

- US. ACGIH Threshold Limit Values 2009

time weighted average = 200 ppm

- · Additional information: The lists valid during the making were used as basis.
- · 8.2 Exposure controls
- Provide appropriate exhaust ventilation at machinery.
- Apply technical measures to comply with the occupational exposure limits.
- · Appropriate engineering controls No further data; see section 7.
- · Individual protection measures, such as personal protective equipment
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

- · Respiratory protection:
- In case of emissions, face mask with type AX cartridge.
- Self-contained breathing apparatus in medium confinement/insufficient oxygen/in case of large

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uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.

- Use only respiratory protection that conforms to international/national standards.

· Hand protection

Protective gloves - impervious chemical resistant - Neoprene and/or Neoprene over natural rubber.

To avoid skin problems reduce the wearing of gloves to the required minimum.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves

- Protective gloves - impervious chemical resistant: Neoprene or/and Neoprene over natural rubber.

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 determined penetration times according to EN 16523-1:2015 are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.

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

· Eye/face protection Goggles recommended during refilling

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

Colour:
Odour:
Ether-like
Odour threshold:
No data available.

• Melting point/freezing point: -43 °C

Boiling point or initial boiling point and boiling

range 36 °C

· Flammability Not applicable.

· Lower and upper explosion limit

• Lower: 3.6 Vol %
• Upper: 13.3 Vol %

• Flash point: Remarks: does not flash, The product is not flammable.

Method: closed cup

· Auto-ignition temperature: 440 °C

• **Decomposition temperature:** No data available

· pH at 20 °C

· Viscosity:

• **Dynamic:** 0.53 mPa.s Temperature: 25 °C

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Solubil	itv

 $3.34 \, g/l$

· Partition coefficient n-octanol/water (log value) log Pow: < 3

Method: calculated value

· Vapour pressure at 20 °C: 433 hPa

Density and/or relative density

· Density at 20 °C: 1.225 g/cm³ · Relative density No data available

· Vapour density

Method: calculated value

9.2 Other information

· Appearance:

· Form: Liquid

· Important information on protection of health and

environment, and on safety.

Product is not selfigniting. · Ignition temperature:

· Explosive properties: Product does not present an explosion hazard.

Void

Void

· Solvent content:

· Organic solvents: 65.0 % · VOC (EC) 65.00 % 0.0 % · Solids content:

· Change in condition

· Flammable gases

· Explosives

· Evaporation rate No data available

· Information with regard to physical hazard classes

Void · Aerosols · Oxidising gases Void · Gases under pressure Void · Flammable liquids Void · Flammable solids Void · Self-reactive substances and mixtures Void · Pyrophoric liquids Void Void · Pyrophoric solids · Self-heating substances and mixtures Void · Substances and mixtures, which emit flammable gases in contact with water Void Void

· Oxidising liquids Void · Oxidising solids · Organic peroxides Void · Corrosive to metals Void · Desensitised explosives Void



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SECTION 10: Stability and reactivity

- · 10.1 Reactivity No further relevant information available.
- · 10.2 Chemical stability
- Stable under recommended storage conditions.
- Strong oxidizers, alkali metals and alkaline earth metals may cause fires or explosions.
- Vapours are heavier than air and may spread along floors.
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · 10.3 Possibility of hazardous reactions No dangerous reactions known.
- · 10.4 Conditions to avoid
- Direct sources of heat.
- Keep away from direct sunlight.
- Do not freeze.
- 10.5 Incompatible materials: Oxidizing agents, Powdered metals, Reducing agents, Alkali metals
- · 10.6 Hazardous decomposition products:
- Gaseous hydrogen fluoride (HF)., Fluorophosgene, Gaseous hydrogen chloride (HCl)., Phosgene, Carbon monoxide, The release of other hazardous decomposition products is possible.

SECTION 11: Toxicological information

- · 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
- · Acute toxicity

Harmful if swallowed.

· LD/LC50 values relevant for classification:

CAS: 156-60-5 trans-dichloroethylene

 Oral
 LD50
 770 mg/kg (rat)

 Inhalative
 LC50/4 h
 95.5 mg/l (rat)

- · Skin corrosion/irritation May cause skin irritation
- · Serious eye damage/irritation Mild eye irritation
- · Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- · Germ cell mutagenicity Based on available data, the classification criteria are not met.
- · Carcinogenicity Based on available data, the classification criteria are not met.
- · Reproductive toxicity Based on available data, the classification criteria are not met.
- $\cdot \textbf{STOT-single exposure} \ \textit{Based on available data, the classification criteria are not met.}$
- · STOT-repeated exposure Based on available data, the classification criteria are not met.
- · Aspiration hazard Based on available data, the classification criteria are not met.
- · Additional toxicological information:

Chronic toxicity

- Inhalation, after a single exposure, dog, NOEL: \geq 7,5 %, cardiac sensitization following adrenergic stimulation, (1,1,1,3,3-pentafluorobutane)
- Inhalation, Repeated exposure, rat, NOEL: 30000 ppm, (1,1,1,3,3-pentafluorobutane)
- Inhalation, 90-day, rat, NOEL: > 4000 ppm, (trans-Dichloro ethylene)
- Oral, rat, NOEL: 190 mg/kg, (trans-Dichloro ethylene)

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· 11.2 Information on other hazards

· Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information

- · 12.1 Toxicity
- · Aquatic toxicity:

Acute toxicity

- Fishes, Brachydanio rerio, LC50, 96 h, > 200 mg/l
- Crustaceans, Daphnia magna, NOEC, 48 h, > 200 mg/l

Chronic toxicity

- Algae, Selenastrum capricornutum, NOEC, 72 h, = 113 mg/l
- · 12.2 Persistence and degradability

Abiotic degradation

- Air, indirect photo-oxidation, t 1/2 ca. 7.04 y

Biodegradation

- aerobic, Tested according to: Closed Bottle test

Remarks: Not readily biodegradable.

- · Behaviour in environmental systems:
- · Components:
- Ozone Depletion Potential:

Ozone depletion potential; ODP; (R-11 = 1) = 0

Result: no effect on stratospheric ozone

- Global Warming Potential:

Global warming potential (GWP) = 890

Remarks: Reference value for carbon dioxide: GWP = 1

· 12.3 Bioaccumulative potential

- Bioaccumulative potential: log Pow ca. 1.61

Result: Bioaccumulation is unlikely.

Remarks: measured value

· 12.4 Mobility in soil

- Air, Henry's law constant (H) ca. 38 hPa.m³/mol

Conditions: 20 °C / calculated value Remarks: considerable volatility

- Soil/sediments, adsorption, log KOC:ca. 1.8

Conditions: calculated value

- · 12.5 Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · vPvB: Not applicable.
- 12.6 Endocrine disrupting properties For information on endocrine disrupting properties see section 11.
- · 12.7 Other adverse effects
- · Remark: Harmful to fish

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- · Additional ecological information:
- · General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water Harmful to aquatic organisms

SECTION 13: Disposal considerations

- · 13.1 Waste treatment methods
- · Recommendation

Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water. Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· European waste catalogue

HP 14 Ecotoxic

- · Uncleaned packaging:
- · Recommendation: Disposal must be made according to official regulations.

Void Void
Void
Void
Void
Void
No
Not applicable.
Not applicable.



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SECTION 15: Regulatory information

- \cdot 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Directive 2012/18/EU
- · Named dangerous substances ANNEX I None of the ingredients is listed.
- · REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
- · 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H332 Harmful if inhaled.

H412 Harmful to aquatic life with long lasting effects.

- · Department issuing SDS: Product safety department
- · Contact:

Austria German Vergiftungsinformations □zentrale 01 406 43 43 http://www.goeg.at/de/VIZ

Belgium French Centre antipoison 070 245 245 http://www.centreantipoisons.be

Dutch Antigif centrum 070 245 245 http://www.antigifcentrum.be

German Giftinformationszentrum 070 245 245 http://www.poisoncentre.be Bulgaria* Bulgarian Токсикологични иентрове 02 9154 411 https://pirogov.eu/bg

Croatia* Croatian Centar za kontrolu otrovanja +385 1 2348 342 https://www.imi.hr/en/jedinica/poison-control-centre

Czech Rep Czech Toxikologické informační středisko +420 224 91 92 93; +420 224 91 54 02 http://www.tis-cz.cz

Denmark Danish Giftlinien +45 8212 1212 https://www.bispebjerghospital.dk/giftlinien

Estonia Estonian Mürgistusteabekeskus 16662; +372 7943 794 https://www.16662.ee

Finland Finnish Myrkytystietokeskus 0800 147 111; +358 9 471 977 http://www.hus.fi/sairaanhoito/sairaanhoitopalvelut/myrkytystietokeskus/Sivut/default.aspx

France French Angers +33 2 41 48 21 21 http://www.centres-antipoison.net/angers/index.html

Bordeaux +33 5 56 96 40 80 http://www.centres-antipoison.net/bordeaux/index.html

Lille +33 0800 59 59 59 http://www.centres-antipoison.net/lille/index.html

Lyon +33 4 72 11 69 11 http://www.centres-antipoison.net/lyon/index.html

Marseille +33 4 91 75 25 25 http://www.centres-antipoison.net/marseille/index.html

Nancy +33 3 83 22 50 50 http://www.centres-antipoison.net/nancy/index.html

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Strasbourg +33 3 88 37 37 37 http://www.centres-antipoison.net/strasbourg/index.html

Toulouse +33 5 61 77 74 47 http://www.centres-antipoison.net/toulouse/index.html

Germany German Berlin +49 30 19240 https://giftnotruf.charite.de

Bonn +49 228 19240 http://www.gizbonn.de/index.php?id=272

Erfurt +49 361 730730 https://www.ggiz-erfurt.de/home.html

 $Freiburg + 49\ 761\ 19240\ https://www.uniklinik-freiburg.de/giftberatung.html$

Göttingen +49 551 19240 https://www.giz-nord.de/cms/index.php

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Homburg/Saar +49 6841 19240

http://www.uniklinikumsaarland.de/de/einrichtungen/

kliniken institute/kinder und_jugendmedizin/ informations und behandlungszentrum fuer vergiftungen des saarlandes

Mainz +49 6131 19240 http://www.giftinfo.uni-mainz.de/index.php?id=24807

München +49 89 19240 http://www.toxinfo.med.tum.de

Greece Greek κέντρο δηλητηριάσεων +30 213 200 9000 http://www.aglaiakyriakou.gr/; http:/ /0317.syzefxis.gov.gr

Hungary Hungarian Egészségügyi Toxikológiai Tájékoztató Szolgálat +36 6 80 20 11 99; +36 06 1 476 6464 http://www.okbi.hu/page.php?trid=1&dz=103

Italy Italian Bergamo +39 800 88 33 00 http://www.asst-pg23.it/section/259/Tossicologia -Centro antiveleni

Firenze +39 55 794 78 19 http://www.antiveleni.altervista.org

Milano +39 2 661 01 029 http://www.centroantiveleni.org

Pavia +39 382 244 44 http://www-3.unipv.it/reumatologia-tossicologia/cav

Napoli +39 81 747 28 70

Foggia +39 881 732 326

Roma +39 6 685 93 726 / +39 6 499 78 000 / +39 6 305 43 43http://www.corso-primo-soccorsoroma.it/centri□antiveleno-lazio.html

Ireland English Poisons information Centre of Ireland +353 1 809 21 66 http://www.poisons.ie/Public

Latvia* Latvian Saindēšanās informācijas centri +371 670 00 610 https://www.aslimnica.lv/lv

Russian Латвия +371 67000610 https://www.aslimnica.lv/lv

Lithuania Lithuanian Apsinuodijimu informacijos biuras + 370 5 236 20 52 http://www.apsinuodijau.lt Luxembourg German Giftinformationszentrum +49 800 255 00 http://www.poisoncentre.be

French Centre antipoison +352 800 255 00 http://www.centreantipoisons.be

- · Date of previous version: 28.12.2021
- · Version number of previous version: 3
- · Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

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)

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

Flam. Liq. 2: Flammable liquids - Category 2 Acute Tox. 4: Acute toxicity - Category 4

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard - Category 3

* Data compared to the previous version altered.