

SAFETY DATA SHEET

1. Identification

Product name: Cruformate

CAS No. : 299-86-5

Product Cat No: E17825 无货

Brand:

Company 北京沃凯生物科技有限公司

Telephone/Fax 010-62971590 62971690

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2. Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Oral, Category 4

Acute toxicity - Dermal, Category 4

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)	
Signal word	Warning
Hazard statement(s)	H302 Harmful if swallowed H312 Harmful in contact with skin H410 Very toxic to aquatic life with long lasting effects
Precautionary statement(s)	

Prevention	P264 Wash ... thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/protective clothing/eye protection/face protection. P273 Avoid release to the environment.
Response	P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/...if you feel unwell. P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P312 Call a POISON CENTER/doctor/...if you feel unwell. P321 Specific treatment (see ... on this label). P362+P364 Take off contaminated clothing and wash it before reuse. P391 Collect spillage.
Storage	none
Disposal	P501 Dispose of contents/container to ...

2.3 Other hazards which do not result in classification

none

3.Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
crufomate	crufomate	299-86-5	none	100%

4.First-aid measures

4.1 Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

Fresh air, rest. Refer for medical attention.

In case of skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

In case of eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

If swallowed

Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact Symptoms: Irritation eyes, skin, respiratory system; wheezing, dyspnea (breathing difficulty); blurred vision, lacrimation (discharge of tears); sweating; abdominal cramps, diarrhea, nausea, anorexia Target Organs: Eyes, skin, respiratory system, blood cholinesterase (NIOSH, 2016)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

A comatose patient who is diaphoretic, has pinpoint pupils and the odor of an insecticide on clothing or breath, and is noted to have muscle fasciculations represents the classic presentation of organophosphate poisoning. ... Specific steps in management include the following. 1. Decontamination. ... 2 Airway. Establish an airway if necessary. ... 3. Respiratory Status. Respiratory distress, in fact, is commonly found in these patients from multiple causes. ... 4. Cardiac Monitoring. ... 5. Cholinesterase Level. ... 6. Pralidoxime. Pralidoxime is the treatment of choice for organophosphate poisoning and should be used for nearly all patients with clinically significant organophosphate poisoning, particularly those patients with muscular fasciculations and weakness. ... 7. Atropine. Atropine is the physiologic antidote for organophosphate poisoning. A trial dose of atropine should be instituted on clinical ground when one suspects organophosphate intoxication. /Organophosphate poisoning/

5.Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

If material on fire or involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.) Use water in flooding quantities as fog. Use "alcohol" foam, carbon dioxide or dry chemical. /Organophosphorus pesticides, solid, NOS/

5.2 Specific hazards arising from the chemical

no data available

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6.Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Personal protection: complete protective clothing including self-contained breathing apparatus. Sweep spilled

substance into sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong bases, strong acids and food and feedstuffs. Well closed. Keep in a well-ventilated room. Rooms used for storage only should be soundly constructed & fitted with secure locks. Floors should be kept clear & pesticides clearly identified. If repacking is carried out in storage rooms, adequate light should be available; floors should be impervious & sound /Pesticides/

8. Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 5 mg/cu m.

Recommended Exposure Limit: 15 Min Short-Term Exposure Limit: 20 mg/cu m.

Biological limit values

no data available

8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

9.Physical and chemical properties

Physical state	Crufomate is a white crystalline solid Mp: 61.5°C. The commercial product is a yellow oil. A phosphoramidate insecticide.
Colour	WHITE CRYSTALLINE SOLID
Odour	no data available
Melting point/ freezing point	60oC
Boiling point or initial boiling point and boiling range	333.2oC at 760mmHg
Flammability	Combustible SolidCombustible. Liquid formulations containing organic solvents may be flammable.
Lower and upper explosion limit / flammability limit	no data available
Flash point	155.3oC
Auto-ignition temperature	no data available
Decomposition temperature	60-65°C
pH	no data available
Kinematic viscosity	no data available
Solubility	Insoluble (NIOSH, 2016)
Partition coefficient n-octanol/water (log value)	no data available
Vapour pressure	0.000138mmHg at 25°C
Density and/or relative density	1.176g/cm3
Relative vapour density	no data available
Particle characteristics	no data available

10.Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

RELATIVELY STABLE AT PH 7.0 OR BELOW AND UNSTABLE IN STRONGLY ACID MEDIA

10.3 Possibility of hazardous reactions

CRUFOMATE is combustible; liquid formulations containing organic solvents may be flammable. Incompatible with

strongly basic and strongly acidic materials. Unstable over long periods in aqueous preparations or above 60°C. Emits toxic fumes of PO_x, Cl₂ and NO_x when heated to decomposition (Hazardous Chemicals Desk Reference p. 272 (1987)).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strongly alkaline & strongly acidic media. [Note: Unstable over long periods in aqueous preparations or above 140 deg F.]

10.6 Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of phosphorus oxides, nitrogen oxides, and Cl⁻.

11.Toxicological information

Acute toxicity

- Oral: LD50 Rat (female) oral 460 mg/kg
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

A4; Not classifiable as a human carcinogen.

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

12. Ecological information

12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

An estimated BCF value of 230 was calculated for ruelene(SRC), using an experimental log Kow of 3.42(1, SRC) and a recommended regression-derived equation(2). According to a classification scheme(3), this BCF value suggests that bioconcentration in aquatic organisms is high(SRC).

12.4 Mobility in soil

The Koc of ruelene is estimated as approximately 1,700(SRC), using a measured log Kow of 3.42(1) and a regression-derived equation(2, SRC). According to a recommended classification scheme(3), this estimated Koc value suggests that ruelene is expected to have low mobility in soil(SRC).

12.5 Other adverse effects

no data available

13. Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. Transport information

14.1 UN Number

ADR/RID: no data available	IMDG: no data available	IATA: no data available
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14.2 UN Proper Shipping Name

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.3 Transport hazard class(es)

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.4 Packing group, if applicable

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.5 Environmental hazards

ADR/RID: yes

IMDG: yes

IATA: yes

14.6 Special precautions for user

no data available

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

no data available

15.Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
crufomate	crufomate	299-86-5	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Not Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Not Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Not Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Not Listed.

16.Other information

Information on revision

Creation Date	Aug 20, 2017
Revision Date	Aug 20, 2017

Abbreviations and acronyms

- CAS: Chemical Abstracts Service

- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.