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

1.1. Product identifier

1.1.1. Trade name **Vole bait WUELFEL (Wühlmausköder WÜLFEL)**

1.1.2. Active substance **Zinc phosphide techn.**
EC No: 215-244-5
CAS No: 1314-84-7
CIPAC No.: 69
REACH Registration number: The active substance is considered in accordance with Article 15, Section 1 of Regulation (EC) No 1907/2006 as registered.

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

1.2.1. Relevant identified uses

Use Category Description:
Life cycle stage: PW: Widespread use by professional workers
C: Consumer use (Home garden and allotment)
Sectors of use: SU 1: Agriculture
Technical function: Plant protection product (feeding bait for controlling voles)

1.2.2. Uses advised against

not known

1.3. Details of the supplier of the safety data sheet

Manufacturer and registration holder:
Chemische Fabrik Wülfel GmbH & Co. KG
Hildesheimer Straße 305, D-30519 Hannover, Germany
Tel.: 0049 511 98496-0, Fax: 0049 511 98406-40
E-mail address of the person responsible for Safety Data Sheet: cfw@wuelfel.de
Web: www.wuelfel.de

1.4. Emergency telephone number

Chemische Fabrik Wülfel: 0049 511 98496-0
(Office hours:
Monday - Thursday 8 o´clock a.m. to 4 o´clock p.m.)
or
Poison control centre north (Bremen, Hamburg, Lower Saxony, Schleswig-Holstein)
Tel.: 00 49 551-19 24 0 (24h emergency call)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 (CLP Regulation)

Acute Tox. 4, H302
Aquatic Acute 1, H400
Aquatic Chronic 1, H410

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)

Risk-determining substance for labelling: zinc phosphide (trizinc diphosphide)
zinc oxide (zinc monoxide)
zinc phosphate (trizinc bis(orthophosphate))

Hazard pictograms

GHS07

GHS09

Signal word: Warning

Hazard statements:

H302: Harmful if swallowed.

H410: Very toxic to aquatic life with long lasting effects.

Supplemental hazard information (EU):

EUH032: Contact with acids liberates very toxic gas.

EUH401: To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements:

General:

P101: If medical advice is needed, have product container or label at hand.

P102: Keep out of reach of children.

Prevention:

P264: Wash hands thoroughly after handling.

P270: Do no eat, drink or smoke when using this product.

P280: Wear protective gloves.

Reaction:

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

P391: Collect spillage.

Storage:

P402 + P404: Store in a dry place. Store in a closed container.

Disposal:

P501: Dispose of contents/container to proper disposal site.

2.2.2. Standard phrases for safety precautions according Regulation (EU) No. 547/2011 (Labelling requirements for plant protection products)

SP 1: Do not contaminate water with the product or its container (Do not clean application equipment near surface water/Avoid contamination via drains from farmyards and roads).

SPe 3: To protect aquatic organisms respect an unsprayed buffer zone of 10 m to surface water bodies.

SPe 4: To protect aquatic organisms/non-target plants do not apply on impermeable surfaces such as asphalt, concrete, cobblestones, railway tracks and other situations with a high risk of run-off.

SPe 6: To protect birds/wild mammals remove spillages.

SPr 1: The baits must be securely deposited in a way so as to minimise the risk of consumption by other animals. Secure bait blocks so that they cannot be dragged away by rodents.

2.3. Other hazards

Vole bait WÜLFEL does not meet the PBT-/vPvB criteria of REACH Regulation, Annex XIII. See also subsections 15.1.1., and 15.1.2.

SECTION 3: Composition/information on ingredients

3.1. Substances

It is not a pure substance.

3.2. Mixtures

Rodenticidal bait on basis of carrot pieces, impregnated with 2.4% zinc phosphide (3% zinc phosphide techn.)
Chemical characterization of the technical grade active substance and its impurities:

Active substance				
Characterization	Index No	EC No	CAS No	Content
$Zn_3 P_2$ zinc phosphide IUPAC: trizinc diphosphide	015-006-00-9	215-244-5	1314-84-7	≥ 80.00 % w/w
Impurities				
Characterization	Index No	EC No	CAS No	Content
ZnO zinc oxide IUPAC: zinc monoxide REACH Registration No: 01-2119463881-32	030-013-00-7	215-222-5	1314-13-2	≤ 20% w/w
$Zn_3 (PO_4)_2$ zinc phosphate IUPAC: trizinc bis(orthophosphate) REACH Registration No: 01-2119485044-40	030-011-00-6	231-944-3	7779-90-0	≤ 5% w/w

Chemical characterization of the feeding bait
Content of active substance: 2.4 % w/w zinc phosphide
Impurities
Zinc oxide: ≤ 0.6 % w/w
Zinc phosphate: ≤ 0.15 % w/w

Harmonised classification of the active substance and its impurities according to Annex VI, table 3, of the CLP Regulation	
Active substance/impurity	**Harmonised Classification**
zinc phosphide	Water-react. 1, H260 [1)] Acute Tox. 2 *, H300 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 M=100 *Minimum classification
zinc oxide	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
zinc phosphate	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
[1)] Take notice of note T in Table 3 of Annex VI of the CLP Regulation. The examination of zinc phosphide with the test method A.12 FLAMMABILITY (CONTACT WITH WATER) of Regulation (EC) No 440/2008 or Test N.5: Test method for substances which in contact with water emit flammable gases, Manual of Tests and Criteria, Recommendations on the transport of Dangerous Goods, sixth revised edition (ST/SG/AC.10/11/Rev.6, United Nations, New York and Geneva, 2015) not supports the specified harmonized classification.	

3.3. Additional information

The text of H statements, which was not mentioned in this section, see section 16.

SECTION 4: First aid measures

4.1. Description of first-aid measures

4.1.1. General informations

Remove all contaminated clothing.
Bring the victim to fresh air, lie down comfortably, loosen tight clothing.

4.1.2. In case of eye contact

Rinse widely opened eye for several minutes under running water. Is advisable to use an eyewash. Remove contact lenses, if present and easy to do. Further treatment by an ophthalmologist.

4.1.3. In case of skin contact

Brush off loose particles from skin. Affected parts of the body wash immediately with plenty of soap and water, seek medical attention if necessary.

4.1.4. Following ingestion

Wash out mouth with water. Do not induce vomiting. Seek medical attention.

4.1.5. Following inhalation of gases, which were released by acid

In case of poisoning caused by released hydrogen phosphide (Odour: garlic or carbide-like) bring the victim to fresh air and give artificial respiration if necessary. Absolutely call physician to accident!

4.1.6. Self-protection of the First Aider

The contact with residual substance should be avoided.

4.2. Most important symptoms and effects, both acute and delayed

If swallowed, stomach acid is releasing hydrogen phosphide (phosphane). The poisoning symptoms can occur after a long latency period. A respiratory paralysis may occur in rare cases even after 24 hours.

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

Applies if swallowed: The vital function is to control, if necessary, perform a shock treatment, artificial respiration with respiratory failure and a one extrathoracic heart massage for cardiac arrest or ventricular fibrillation. Administer symptomatic treatment of cramp attacks, high dosage of corticoids if impending lung oedema, electrolyte balance if necessary, possibly hospitalization.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: dry sand, carbon dioxide, fire extinguisher class C
Unsuitable extinguishing media: water, foam

5.2. Special hazards arising from the substance

In contact with acids forming hydrogen phosphide which can ignite.

5.3. Advice for fire-fighters

In closed rooms may form an explosive hydrogen phosphide/air-mixture in contact with acids. There is a respirator with B2-P2 combination filter or a self-contained breathing apparatus to apply.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

When handling spillages protect hands and other body parts with gloves and protective clothing.

6.2. Environmental precautions

Vole bait Wuelfel must not enter the sewage system or water bodies.

6.3. Methods and material for containment and cleaning up
The contents of leaking packages must be decant to equivalent containers.
Sweep up the spilled product and removes it mechanically. It should not be stirred up dust.
Fill the product into suitable containers.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Follow the safety instructions in Sections 2.2.1., and 2.2.2.
7.2. Conditions for safe storage, including any incompatibilities
The product is stored always dry and only in the closed original package in remote locations of dwellings, in well ventilated areas, separate from foodstuffs, beverages and animal feedstocks.
Keep away from acids!
Recommended storage temperature: -5 ° C to +30 ° C.
Storage stability: 3 years
Take notice of TRGS 510 "Storage of hazardous substances in non-stationary containers" (https://www.baua.de/EN/Service/Legislative-texts-and-technical-rules/Rules/TRGS/pdf/TRGS-510.pdf?__blob=publicationFile&v=2)
Hints for protection against fire and explosion:
Suck the resulting dust and gases, avoid depositing of dust.
7.3. Specific end use(s)
Rodenticidal feeding bait.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
None
8.2. Exposure controls
8.2.1. Personal protective equipment
8.2.1.1. Eye / Face protection
Not necessary
8.2.1.2. Respiratory protection
In compliance with the instructions of use not necessary.
8.2.1.3. Skin protection
Suitable protective gloves made of PVC or PE for plant protection products.
8.2.2. General health and safety measures
Avoid unnecessary contact with the product.
Wash hands after work, change contaminated clothing.
While using do not eat, drink or smoke.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

Property	Value / Description
Appearance	red-brown carrot pieces
Weight	Ø 50 mg/ piece
Odour	carrots like
Odour threshold	person-specific
pH (20 °C)	not relevant, since solid

Melting point or melting range	not determined, since occurs at high temperatures charring
Initial boiling point and boiling range	not determined, since occurs at high temperatures charring
Flash point	not applicable, since solid
Evaporation rate	not measurable, since vapor pressure is very low
Flammability (solid)	not highly flammable according to EC test method A.10
Upper/lower flammability or explosive limits:	not determined, see explanation to flammability
Vapour Pressure (20 °C)	not determined, since very low
Vapour density	not determinable, since vapor pressure very low
Density: Bulk density	1.50 kg/L (at 20°C), determined according to EC test method A.3 0.52 kg/L (at 20 °C), determined according to CIPAC method MT 186
Solubilities Solubility in water	 insoluble
Partition coefficient: n-octanol/water (log K_{OW})	not determinable, since insoluble in water
Auto-ignition temperature	not applicable, since stable solid
Decomposition temperature	not determined, since not relevant for use as bait
Viscosity	not applicable, since stable solid
Explosive properties	not applicable, since stable inorganic solid (insensitive to heat, impact or friction, contains no chemically unstable or high energetic groups)
Oxidising properties	not applicable, all components contain no oxidizing acting molecule groups

9.2. Other information

Decomposition of the active substance with acids to very toxic hydrogen phosphide (phosphane) and diphosphane (formerly called diphosphine). The latter ignites spontaneously on contact with atmospheric oxygen.

The lower explosive limit of phosphine is 1.79% by volume, the upper explosive limit at 100% vol. The ignition temperature is about 100 ° C.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with acids forming the gases hydrogen phosphide (phosphane) and diphosphane. The latter ignites spontaneously on contact with the air.

10.2. Chemical stability

In the dry state or in a dry environment, the product is stable.

10.3. Possibility of hazardous reactions

See sub-section 10.1.

10.4. Conditions to avoid
Contact with acids should be avoided.
10.5. Incompatible materials
Acids
10.6. Hazardous decomposition products
With acids are formed hydrogen phosphides, which are highly toxic and highly flammable. At very high temperatures, e.g. fires, may result phosphorus pentoxide which reacts with moisture or fire water to phosphoric acid.

SECTION 11: Toxicological information
11.1. Information on toxicological effects
11.1.1. Acute toxicity
Acute oral toxicity:
LD_{50} (oral, rat): 355 mg/kg body weight (OECD Guideline 401)
Poisoning effect:
After oral intake, gastrointestinal pain.
The gastric acid evolved hydrogen phosphide.
Hydrogen phosphide inhibits important enzyme systems and is a powerful metabolic and nervous toxin. This can lead to death through respiratory paralysis, pulmonary edema, and collapse. Consequential damage to heart, liver and kidney dysfunction.
11.1.2. Skin corrosion/irritation
A corrosion / irritation to the skin was not observed.
11.1.3. Eye damage/irritation
A serious eye damage / irritation was not observed.
11.1.4. Sensitisation to the respiratory tract /skin
There are currently no indications to this effect.
11.1.5. Germ cell mutagenicity
There are currently no indications to this effect.
11.1.6. Carcinogenicity
There are currently no indications to this effect.
11.1.7. Reproductive toxicity
There are currently no indications to this effect.
11.1.8. Specific target organ toxicity (single exposure)
There are currently no indications to this effect.
11.1.9. Specific target organ toxicity (repeated exposure)
There are currently no indications to this effect.
11.1.10. Aspiration hazard
There are currently no indications to this effect.

SECTION 12: Ecological information
12.1. Toxicity
12.1.1. Acute aquatic toxicity
For the active substance zinc phosphide following values were determined (see DAR Zinc phosphide, Volume 3, Annex B, part 5, B.9, November 2009):
The LC_{40} (96h) value for the fish ide (*Leuciscus idus*) is 0.0217 mg/L (OECD Guideline 203 (1992)).
The EC_{50} (48h) value for the species *Daphnia magna* is 0.114 mg/L (OECD Guideline 202 (1984)).

Following EC values for algae (Desmodesmus subspicata) were determined (OECD Guideline 201 (Alga growth inhibition test)):
E_rC_{50} (72h) = 0.00375 mg/L
E_bC_{50} (72h) = 0.00821 mg/L
Note: The studies were performed with the maximum attainable concentration (MAC), in which the formation of a suspension was observed.
Because of the toxicity to aquatic organisms do not contaminate ponds, waterways or ditches with chemical or used container.
Vole bait WUELFEL is also toxic to other vertebrates, fish, birds and fish food organisms.

12.2. Persistence and degradability
The oxidative degradation of zinc phosphide takes place to form harmless salts of phosphorous acid and phosphoric acid.

12.3. Bioaccumulative potential
Zinc phosphide is metabolized by oxidation in an aqueous environment to phosphates. Thus, the potential for bioaccumulation is low.

12.4. Mobility in soil
Depends on the solubility of the phosphates from the soil formed.

12.5. Results of PBT and vPvB assessment
Vole bait WUELFEL does not meet the PBT-/vPvB criteria of REACH Regulation, Annex XIII.

12.6. Other adverse effects
None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:
In accordance with regulations for special waste disposal via authorized waste disposal contractor to a suitable approved waste disposal site. Do not contaminate drains with the rest of the product.
Give the closed original containers to the nearest hazardous waste disposal site.

Packaging:
Empty containers may not be reused and must be disposed analogous as the product.

SECTION 14: Transport information

14.1. UN number
UN3077

14.2. UN proper shipping name

ADR/RID:
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Zinc phosphide)

IMDG-Code:
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Zinc phosphide)

ICAO-TI/IATA-DGR:
Environmentally hazardous substance, solid, n.o.s., (Zinc phosphide)

14.3. Transport hazard class(es)
9 (Miscellaneous dangerous substances and articles, including environmentally hazardous substances)

14.4. Packing group
III (Substances presenting low danger)
14.5. Environmental hazards
Labelling of environmentally hazardous substance
ADR/RID/ IMDG-Code/ICAO-TI/IATA-DGR: yes (see sub-sections 2.2.1. and 12.1.)

Marine Pollutant: yes (see sub-sections 2.2.1., 12.1., and Annex III of MARPOL)

14.6. Special precautions for user
Consult the sections 6-8, 10, and 12, respectively.
14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code
Not relevant, substance is a solid and no bulk.
14.8. Additional information
ADR Tunnel restriction code (-)
The passage through all tunnels is allowed.

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
15.1.1. EU regulations
Safety Data Sheet:
Regulation (EC) No 1907/2006 (REACH), Annex II (SDS) is amended by Annex of Regulation (EU) 2015/830.
Classification and labelling:
Regulation (EC) No 1272/2008 (CLP (EU-GHS) Regulation
Crop protection:
Regulation (EC) No 1107/2009
Regulation (EC) No 540/2011, is amended by Regulation (EU) No 541/2011
(The active substance zinc phosphide is registered under No. 314 in the table of Part A)
Regulation (EU) No 547/2011 (Labelling requirements for plant protection products)
Seveso III
Directive 2012/18/EU
Vole bait Wuelfel: E1 (Hazardous to the Aquatic Environment in Category Chronic 1)
15.1.2. Basic national regulations (Germany)
Plant Protection Act (PflSchG)
Act on the Protection Against Hazardous Substances (Chemicals Act (ChemG))
Hazardous Substances Ordinance (GefStofV)
Banned Chemicals Ordinance (ChemVerbotsV)
Act on the protection of young people in employment (JArbSchG)
Act on the protection of mothers at work, in education and in studies (MuSchG)
Ordinance on facilities for handling substances that are hazardous to water (AwSV)
zinc phosphide (trizinc diphosphide) (identification number: 431, see database Rigoletto): Water hazard class (WGK): 3 (highly hazardous to water)
zinc oxide (zinc monoxide) (identification number: 2187, see database Rigoletto): Water hazard class (WGK): 2 (obviously hazardous to water)
zinc phosphate (trizinc bis(orthophosphate)) (identification number: 5067, see database Rigoletto): Water hazard class (WGK): 2 (obviously hazardous to water)

Vole bait Wuelfel, Water hazard classes (WGK): 3 (highly hazardous to water)
(Derivation: mass fraction of zinc phosphide (M factor: 100) ≥ 3%, see AwSV, Annex 1, section 5.2.1 Derivation of water hazard class 3)
The product is registered according to §16e Chemicals Act (ChemG) at the Federal Institute for Risk Assessment (BfR).
The BfR product number is 7429273.

15.2. Chemical Safety Assessment

The safety information on the preparation and use of the active substance in a plant protection product in the form of a bait is presented in the DAR zinc phosphide (November 2009).
This document meets all made requirements in Annex I of the REACH Regulation on the Chemical Safety Report (CSR).

SECTION 16: Other information

16.1 Indication of changes

Subsection 15.1.2. - Replacement of the product number with a new one assigned by the Federal Institute for Risk Assessment
Subsection 16.3. - Actualization

16.2. Codes of hazard classes and hazard statements

a) hazard classes and categories in subsection 2.1.1

Acute Tox. 4 - Acute toxicity, category 4
Aquatic Acute 1 - Hazardous to the aquatic environment, acute, category 1
Aquatic Chronic 1 - Hazardous to the aquatic environment, chronic, category 1

b) Hazard statements under Regulation (EC) No 1272/2008, the text of which was not specified in section 3

H260 In contact with water releases flammable gases which may ignite spontaneously.
H300 Fatal if swallowed.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

16.3. Literature and sources

Directives and Regulations

Regulation (EC) No 1107/2009, was last amended by Regulation (EU) 2018/605
Regulation (EG) Nr. 1907/2006 (REACH), was last amended by Regulation (EU) 2018/1881
CLP (EU-GHS) Regulation (EC) Nr. 1272/2008, was last amended by Regulation (EU) 2019/521
Regulation (EU) No 547/2011, was last amended by Regulation (EU) No 519/2013
Directive 2012/18/EU (Seveso III)

Zinc phosphide

Conclusion on the peer review of the pesticide risk assessment of the active substance zinc phosphide, EFSA Journal 2010; 8(7):1671.
(http://www.efsa.europa.eu/en/efsajournal/doc/1671.pdf)

REACH Registration Dossier:

Zinc oxide (REACH Registration Number: 01-2119463881-32)
Zinc phosphate (REACH Registration Number: 01-2119485044-40)

16.4. Methods in accordance with Chapter 2, Article 9, of Regulation (EC) No 1272/2008 to assess the information that has been used for the purpose of classification

Health and environmental hazards: evaluation of animal and plant testing results (rat, fish, algae, daphnia).

16.5. Abbreviations and acronyms

ADR Accord européen relatif au transport international des marchandises Dangereuses par Route - European arrangements about the international

	transport of dangerous goods on the streets
CAS	Chemical Abstracts Service
CIPAC	Collaborative International Pesticides Analytical Council
CSR	Chemical Safety Report
DAR	Draft Assessment Report
EC	Effective concentration
E_bC	Effective concentration (Biomass)
E_rC	Effective concentration (Growth rate)
EFSA	European Food Safety Authority
EN	European norms
IATA-DGR	International Air Transport Association - Dangerous Goods Regulation
IBC-Code	International code for the construction and the equipment of ships for the transport of dangerous goods as bulk goods.
ICAO-TI	International Civil Aviation Organization - Technical Instructions
IMDG-Code	International Maritime Code for Dangerous Goods
IUPAC	International Union of Pure and Applied Chemistry
IVA	Industrieverband Agrar e.V. - German Crop Protection Pest Control and Fertilizer Association (Incorporated Society)
LD	lethal dose
LC	lethal concentration
MARPOL	Maritime Pollution Convention
PBT	Persistent, Bio-accumulative, Toxic
PE	polyethylene
PVC	polyvinyl chloride
REACH	Registration, Evaluation, Authorisation of Chemicals
RID	Règlement International concerante le transport des marchandises Dangereuses par chemins de fer - Regulation for the international transport of dangerous goods in the rail transport.
UN	United Nations
TRGS	Technical Rules for Hazardous Substances
vPvB	very persistent and very bio-accumulative

16.6. Further information

This information is based on our present knowledge. They do not constitute an assurance of product properties and establishes no contract legal rights.

Vole bait Wuelfel is approved by the Federal Office of Consumer Protection and Food Safety (Germany) under the number 033366-00 until 31.12.2021 as plant protection product.