1. Identification

Product identifier used on the label

Zidua SC Herbicide

Recommended use of the chemical and restriction on use
Recommended use*: herbicide

* The “Recommended use” identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Substance number: 904612
EPA Registration number: 7969-374

2. Hazards Identification


Classification of the product

<table>
<thead>
<tr>
<th>STOT RE</th>
<th>Aquatic Acute</th>
<th>Aquatic Chronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Specific target organ toxicity — repeated exposure
Hazardous to the aquatic environment - acute
Hazardous to the aquatic environment - chronic

Label elements

Pictogram:
Signal Word:
Warning

Hazard Statement:
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):
P280 Wear protective gloves.
P273 Avoid release to the environment.
P260 Do not breathe dust/gas/mist/vapours.
P272 Contaminated work clothing should not be allowed out of the workplace.

Precautionary Statements (Response):
P314 Get medical advice/attention if you feel unwell.
P303 + P352 IF ON SKIN (or hair): Wash with plenty of soap and water.
P333 + P311 If skin irritation or rash occurs: Call a POISON CENTER or doctor/physician.
P391 Collect spillage.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Precautionary Statements (Disposal):
P501 Dispose of contents/container to hazardous or special waste collection point.

Hazards not otherwise classified

Labeling of special preparations (GHS):
Product contains the following components and may cause an allergic skin reaction: 1,2-benzisothiazol-3(2H)-one, 5-chloro-2-methyl-2H-isothiazol-3-one, 2-Methyl-4-Isothiazolin-3-one
The substance may cause sensitization of the skin in particularly sensitive individuals. Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

3. Composition / Information on Ingredients


<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Weight %</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>447399-55-5</td>
<td>41.46%</td>
<td>Pyroxasulfone</td>
</tr>
<tr>
<td>57-55-6</td>
<td>5.0 - 10.0%</td>
<td>Propylene glycol</td>
</tr>
<tr>
<td>52-51-7</td>
<td>&lt; 0.1%</td>
<td>bronopol</td>
</tr>
<tr>
<td>2634-33-5</td>
<td>&lt; 0.1%</td>
<td>1,2-benzisothiazol-3(2H)-one</td>
</tr>
<tr>
<td>26172-55-4</td>
<td>&lt; 0.1%</td>
<td>5-chloro-2-methyl-2H-isothiazol-3-one</td>
</tr>
<tr>
<td>2682-20-4</td>
<td>&lt; 0.1%</td>
<td>2-Methyl-4-Isothiazolin-3-one</td>
</tr>
</tbody>
</table>

4. First-Aid Measures

Description of first aid measures
General advice:
Remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

If on skin:
Wash thoroughly with soap and water.

If in eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open.

If swallowed:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed
Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

Indication of any immediate medical attention and special treatment needed
Note to physician
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media
Suitable extinguishing media:
water spray, dry powder, foam, carbon dioxide

Special hazards arising from the substance or mixture
Hazards during fire-fighting:
carbon monoxide, carbon dioxide, nitrogen oxides
The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters
Protective equipment for fire-fighting:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Keep containers cool by spraying with water if exposed to fire. In case of fire and/or explosion do not breathe fumes. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Do not breathe vapour/spray. Use personal protective clothing. Avoid contact with the skin, eyes and clothing.

**Environmental precautions**
Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

**Methods and material for containment and cleaning up**
Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

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### 7. Handling and Storage

**Precautions for safe handling**
RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect against heat. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:
No special precautions necessary. The substance/product is non-combustible. Product is not explosive.

**Conditions for safe storage, including any incompatibilities**
Segregate from foods and animal feeds.

Further information on storage conditions: Keep away from heat. Protect from direct sunlight.

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### 8. Exposure Controls/Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

No occupational exposure limits known.

**Personal protective equipment**

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

**Respiratory protection:**
Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) particulate respirator.
Hand protection:
Chemical resistant protective gloves. Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:
Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:
The statements on personal protective equipment in the instructions for use apply when handling crop-protection agents in final-consumer packing. Wearing of closed work clothing is recommended. Store work clothing separately. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form: suspension
Odour: odourless
Odour threshold: not applicable, odour not perceivable
Colour: milky white
pH value: approx. 5.5 - 7.5
(1 %,(m), 23 °C)
Melting point: approx. > 0 °C
Information applies to the solvent.
Boiling point: approx. 100 °C
(1,013 hPa)
Information applies to the solvent.
Flash point: No flash point - Measurement made up to the boiling point.
Flammability: not applicable
Lower explosion limit: As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Upper explosion limit: As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Autoignition: 360 °C
Vapour pressure: approx. 23 hPa
(20 °C)
Information applies to the solvent.
Density: approx. 1.21 g/cm³
(20 °C)
Vapour density: not applicable
Information on: Isoxazole, 3-[[5-(difluoromethoxy)-1-methyl-3-( trifluoromethyl)-1H-pyrazol-4-yl][methyl]sulfonyl]-4,5-dihydro-5,5-dimethyl-
Partitioning coefficient n-octanol/water (log Pow): 2.39
(25 °C)
10. Stability and Reactivity

Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

Oxidizing properties:
not fire-propagating

Chemical stability
The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions
No hazardous reactions if stored and handled as prescribed/indicated.

Conditions to avoid
See MSDS section 7 - Handling and storage.

Incompatible materials
strong acids, strong bases, strong oxidizing agents

Hazardous decomposition products

Decomposition products:
Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:
210 °C
(onset temperature) Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity
Assessment of acute toxicity: The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Virtually nontoxic by ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

**Oral**
Type of value: LD50  
Species: rat  
Value: > 2,000 mg/kg  
No mortality was observed.

**Inhalation**
Type of value: LC50  
Species: rat (male/female)  
Value: > 3.8 mg/l  
Exposure time: 4 h  
No mortality was observed. Highest concentration available for testing.

**Dermal**
Type of value: LD50  
Species: rat  
Value: > 5,000 mg/kg  
No mortality was observed.

**Assessment other acute effects**
**Assessment of STOT single:**
Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

The product has not been tested. The statement has been derived from the properties of the individual components.

**Irritation / corrosion**
Assessment of irritating effects: The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. Not irritating to the skin. Not irritating to the eyes.

**Skin**
Species: rabbit  
Result: non-irritant

**Eye**
Species: rabbit  
Result: non-irritant

**Sensitization**
Assessment of sensitization: The product has not been tested. The statement has been derived from the properties of the individual components. Sensitization after skin contact possible. The product contains 1,2-benzisothiazolin-3-one (CAS-No.: 2634-33-5). The product contains 2-methyl-4-isothiazolin-3-one (CAS-No.: 2682-20-4). The substance may cause sensitization of the skin in particularly sensitive individuals. Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

*Information on: 1,2-benzisothiazol-3(2H)-one*
**Guinea pig maximization test**
*Species: guinea pig*
*Result: Caused skin sensitization in animal studies.*
*Method: OECD Guideline 406*
Literature data.

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Chronic Toxicity/Effects

Repeated dose toxicity
Assessment of repeated dose toxicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Isoxazole, 3-[[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl][methyl]sulfonyl]-4,5-dihydro-5,5-dimethyl-
Assessment of repeated dose toxicity: Repeated oral exposure to small quantities may affect certain organs.

Information on: bronopol
Assessment of repeated dose toxicity: After repeated exposure the prominent effect is local irritation.

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Genetic toxicity
Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: bronopol
Assessment of mutagenicity: The substance was mutagenic in a mammalian cell culture test system. No mutagenic effect was found in various tests with bacteria and mammals.

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Carcinogenicity
Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Isoxazole, 3-[[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl][methyl]sulfonyl]-4,5-dihydro-5,5-dimethyl-
Assessment of carcinogenicity: When given in high doses, the substance was carcinogenic in animal studies. Based on its mechanism of action, a carcinogenic potential is not expected after exposure to low doses.

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Reproductive toxicity
Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity
Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Other Information
Misuse can be harmful to health.

Symptoms of Exposure

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11. Further important symptoms and effects are so far not known.
12. Ecological Information

**Toxicity**

Aquatic toxicity
Assessment of aquatic toxicity:
Very toxic to aquatic life with long lasting effects.
The product has not been tested. The statement has been derived from the properties of the individual components.

Toxicity to fish

*Information on:* Isoxazole, 3-[[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl][methyl]sulfonyl]-4,5-dihydro-5,5-dimethyl-

*LC50 (96 h)* > 2.2 mg/l, Oncorhynchus mykiss

*Aquatic invertebrates*

*Information on:* Isoxazole, 3-[[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl][methyl]sulfonyl]-4,5-dihydro-5,5-dimethyl-

*EC50 (48 h)* > 4.4 mg/l, daphnia

*Aquatic plants*

*Information on:* Pyroxasulfone

*EC10 (96 h)* 0.00035 mg/l, Pseudokirchneriella subcapitata

*EC50 (96 h)* 0.00079 mg/l, Pseudokirchneriella subcapitata

*Chronic toxicity to fish*

*Information on:* Isoxazole, 3-[[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl][methyl]sulfonyl]-4,5-dihydro-5,5-dimethyl-

No observed effect concentration (28 d) 2.0 mg/l, Pimephales promelas

*Chronic toxicity to aquatic invertebrates*

*Information on:* Isoxazole, 3-[[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl][methyl]sulfonyl]-4,5-dihydro-5,5-dimethyl-

No observed effect concentration (21 d) 1.9 mg/l, Daphnia sp.

**Persistence and degradability**

Assessment biodegradation and elimination (H2O)
The product has not been tested. The statement has been derived from the properties of the individual components.

Assessment biodegradation and elimination (H2O)

*Information on:* Isoxazole, 3-[[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl][methyl]sulfonyl]-4,5-dihydro-5,5-dimethyl-
Not readily biodegradable (by OECD criteria).

Bioaccumulative potential

Assessment bioaccumulation potential
The product has not been tested. The statement has been derived from the properties of the individual components.

Assessment bioaccumulation potential

Information on: Isoxazole, 3-[[[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl]methyl]sulfonyl]-4,5-dihydro-5,5-dimethyl-

Mobility in soil

Assessment transport between environmental compartments
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Pyroxasulfone

Following exposure to soil, the product trickles away and can - dependant on degradation - be transported to deeper soil areas with larger water loads.

Additional information

Other ecotoxicological advice:
Do not discharge product into the environment without control.

13. Disposal considerations

Waste disposal of substance:
Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:
Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

14. Transport Information

Land transport
USDOT
Not classified as a dangerous good under transport regulations

Sea transport
IMDG
15. Regulatory Information

Federal Regulations

Registration status:
Crop Protection  TSCA, US  released / exempt
Chemical  TSCA, US  blocked / not listed

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

State regulations

<table>
<thead>
<tr>
<th>State RTK</th>
<th>CAS Number</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>NJ</td>
<td>57-55-6</td>
<td>Propylene glycol</td>
</tr>
<tr>
<td>PA</td>
<td>57-55-6</td>
<td>Propylene glycol</td>
</tr>
</tbody>
</table>

Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

WARNING: This product can expose you to chemicals including ETHYLENE OXIDE, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Labeling requirements under FIFRA

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

CAUTION:
KEEP OUT OF REACH OF CHILDREN.
HARMFUL IF SWALLOWED.
Wash thoroughly after handling.
16. Other Information

SDS Prepared by:
BASF NA Product Regulations
SDS Prepared on: 2018/06/25

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.