1. Identification of the Substance/Preparation and of the Company/Undertaking

Product identifier
Product Description: Ziram XCEL

Other means of identification
Item#: 12-140XL
UN-No 3077
Registration number(s) 70506-173

Recommended use of the chemical and restrictions on use
Recommended use Fungicides.
Uses advised against Activities contrary to label recommendation

Details of the Supplier of the Safety Data Sheet
Supplier Address
United Phosphorus Inc.
630 Freedom Business Center
Suite 402
King of Prussia, PA 19406

Emergency telephone number
Company Phone Number 1-800-438-6071
Emergency telephone number Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887
Medical: Rocky Mountain Poison Control Center (866) 673-6671 (24hrs)

2. Hazards Identification

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazard Type</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 4</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation (Gases)</td>
<td>Category 1</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation (Vapors)</td>
<td>Category 1</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation (Dusts/Mists)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>Category 1</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

Label elements

EMERGENCY OVERVIEW

DANGER

Hazard Statements
HARMFUL IF SWALLOWED
Fatal if inhaled
Causes serious eye damage
May cause an allergic skin reaction
May cause respiratory irritation
May cause damage to organs through prolonged or repeated exposure
Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
In case of inadequate ventilation wear respiratory protection
Wear protective gloves/protective clothing/eye protection/face protection
Contaminated work clothing should not be allowed out of the workplace

Precautionary Statements - Response
Get medical advice/attention if you feel unwell
IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor if you feel unwell
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards Not Otherwise Classified (HNOC)
OTHER INFORMATION
• Very toxic to aquatic life with long lasting effects
• Very toxic to aquatic life
• May be harmful in contact with skin

3. Composition/information on Ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>Trade secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc, bis(dimethylcarbamodithioaat-kappaS, kappaS)-(T-4)</td>
<td>137-30-4</td>
<td>76</td>
<td></td>
</tr>
</tbody>
</table>

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. First aid measures

FIRST AID MEASURES
Eye contact Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact
lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Skin contact
Wash off immediately with plenty of water removing all contaminated clothes and shoes. Call a poison control center or doctor for treatment advice.

Inhalation
Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Ingestion
Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Protection of First-aiders
Use personal protective equipment.

Most Important Symptoms and Effects, Both Acute and Delayed
No information available.

Indication of Any Immediate Medical Attention and Special Treatment Needed
Notes to physician
Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media
Carbon dioxide (CO2).
Use: Dry chemical. Water spray. alcohol-resistant foam.

Unsuitable extinguishing media
No information available.

Specific hazards arising from the chemical
Thermal decomposition can lead to release of irritating gases and vapours.

Hazardous combustion products
carbon disulfide, sulfur dioxide.

Explosion data
Protective equipment and precautions for firefighters
Use personal protective equipment. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions
Wear protective gloves/protective clothing and eye/face protection. Avoid contact with skin and eyes. Wash thoroughly after handling.

Environmental Precautions

Environmental precautions
Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Methods and material for containment and cleaning up

Methods for Clean-Up
Sweep up and shovel into suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling
Handling
Wear personal protective equipment. Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Keep out of reach of children.

Conditions for safe storage, including any incompatibilities

Storage
Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat. Protect from light. Keep in properly labelled containers.

Incompatible materials
Strong oxidizing agents.

8. Exposure Controls/Personal Protection

Exposure guidelines
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering controls
Investigate engineering techniques to reduce exposures. Local mechanical exhaust ventilation is preferred. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Personal protective equipment

Eye/Face Protection
Use eye protection to avoid eye contact. Where there is potential for eye contact have eye flushing equipment available. Safety glasses with side-shields.

Skin protection
Wear protective gloves/clothing. Socks and footwear.

Respiratory protection
Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus. Respiratory protection programs must comply with 29 CFR 1910.134.

General hygiene considerations
Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>VALUES</th>
<th>Remarks/ Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>powder</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>white light brown</td>
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</tr>
<tr>
<td>color</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability limit in air</td>
<td>No information available</td>
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</tr>
<tr>
<td>Upper Flammability Limit</td>
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</tr>
<tr>
<td>Lower Flammability Limit</td>
<td>No information available</td>
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<tr>
<td>Vapor pressure</td>
<td>No information available</td>
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</tr>
<tr>
<td>Vapor Density</td>
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</tr>
<tr>
<td>Specific gravity</td>
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<td></td>
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<tr>
<td>Water solubility</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Solubility in Other Solvents</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>
10. Stability and Reactivity

Reactivity
no data available

Chemical stability
Stable under normal conditions. Hazardous polymerisation does not occur.

Possibility of hazardous reactions
None under normal processing.

- Hazardous polymerization
  Hazardous polymerisation does not occur.

Conditions to avoid
Keep away from children.

incompatible materials
Strong oxidizing agents.

Hazardous decomposition products
Oxides of sulfur.

11. Toxicological Information

Information on Likely Routes of Exposure

Product information
Ziram 76 DF

Single exposure studies indicate that this material is slightly toxic if swallowed (rat LD50 1,889 mg/kg), practically non-toxic if absorbed through skin (rabbit LD50 >5,000 mg/kg), moderately toxic if inhaled (rat 4 hr LC50 < 0.53 mg/l), severely irritating to rabbit eyes and non-irritating to rabbit skin. No skin allergy was observed in guinea pigs following repeated exposure.

- Inhalation
  Harmful by inhalation.

- Eye contact
  Causes irreversible eye damage.

- Skin contact
  May be harmful if absorbed through the skin.

- Ingestion
  HARMFUL IF SWALLOWED.

Information on Toxicological Effects
Symptoms
No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization
No information available.

Mutagenic effects
No information available.

Carcinogenicity
The information below indicates whether any agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
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</thead>
<tbody>
<tr>
<td>Zinc, bis(dimethylcarbamodithioao-t-kappaS, kappaS)-(T-4) 137-30-4</td>
<td>-</td>
<td>Group 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reproductive effects
Not Available.

STOT - Single Exposure
No information available.

STOT - Repeated Exposure
No information available.

Chronic toxicity
Avoid repeated exposure.

Aspiration hazard
No information available.

Numerical Measures of Toxicity - Product information

| LD50 Oral       | 1889 mg/kg (rat) |
| LD50 Dermal     | > 5000 mg/kg (rat) |
| LC50 Inhalation | Inhalation LC50 < 0.53 mg/l |

12. Ecological Information

Marine Pollutant.

ecotoxicity

Zirm 76 DF:
Highly toxic to Daphnia magna 48 hr LC50 0.048 mg/L
Bluegill sunfish 96 hr LC50 0.0097 mg/L
Moderately toxic to Rainbow trout 96 hr LC50 1.7 mg/L
Bobwhite quail LC50 97 mg/kg
Honeybees LC50 100 ug/bee

Persistence/Degradability
No information available.

Bioaccumulation/ Accumulation
Bioaccumulative potential.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc, bis(dimethylcarbamodithioao-t-kappaS, kappaS)-(T-4) 137-30-4</td>
<td>1.086</td>
</tr>
</tbody>
</table>

Other Adverse Effects
No information available.

13. Disposal Considerations

Waste Treatment Methods

Waste Disposal Method
Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If the wastes cannot be disposed of by use or according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Contaminated packaging
Refer to product label.
14. Transport Information

**DOT**

- **UN-No**: 3077
- **Proper shipping name**: Environmentally hazardous substances, solid, n.o.s (Ziram)
- **Hazard class**: 9
- **Packing group**: PG III
- **Reportable Quantity (RQ)**: 10 lbs
- **Marine Pollutant**: Marine Pollutant.

**ICAO**

- **UN-No**: UN3077
- **Proper shipping name**: Environmentally hazardous substance, solid, n.o.s (Ziram)
- **Hazard class**: 9
- **Packing group**: PG III
- **Description**: Marine Pollutant

**IATA**

- **UN-No**: 3077
- **Proper shipping name**: Environmentally hazardous substances, solid, n.o.s (Ziram)
- **Hazard class**: 9
- **Packing group**: PG III
- **Description**: Marine Pollutant

**IMDG/IMO**

- **UN-No**: 3077
- **Proper shipping name**: Environmentally hazardous substances, solid, n.o.s (Ziram)
- **Hazard class**: 9
- **Packing group**: PG III
- **EmS No.**: F-A, S-F
- **Marine Pollutant**: Yes

15. Regulatory Information

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 for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**signal word**

- **DANGER**

**Ventilation Control**

- **PESTICIDE APPLICATORS & WORKERS THESE WORKERS MUST REFER TO PRODUCT LABELING AND DIRECTIONS FOR USE IN ACCORDANCE WITH EPA WORKER PROTECTION STANDARD 40 CFR PART 170.**

- **Corrosive. Causes irreversible eye damage. May be fatal if inhaled. Harmful if swallowed or absorbed through the skin. Toxic to fish and aquatic invertebrates.**

**International Inventories**

**USINV**

- **Not present**
DSL/NDSL  Present
EINECS/  Not Present
ELINCS  
ENCS  Not Present
China  Not Present
KECL  Present
PICCS  Not Present
AICS  Present
TSCA  Not Present

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372:

SARA 311/312 Hazardous
Categorization

<table>
<thead>
<tr>
<th></th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute health hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic health hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sudden release of pressure hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CERCLA
Not applicable

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>RQ</th>
<th>CERCLA EHS RQs</th>
<th>RQ</th>
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<tbody>
<tr>
<td>Zinc, bis(dimethylcarbamidithioato-kappaS, kappaS)-(T-4) 137-30-4</td>
<td>10 lb</td>
<td>RQ 10 lb final RQ RQ 4.54 kg final RQ</td>
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</tbody>
</table>

CERCLA

<table>
<thead>
<tr>
<th>Component</th>
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</thead>
<tbody>
<tr>
<td>Zinc, bis(dimethylcarbamidithioato-kappaS, kappaS)-(T-4) 137-30-4 (76)</td>
<td>10 lb</td>
</tr>
</tbody>
</table>

SARA Product RQ 0

RCRA

<table>
<thead>
<tr>
<th>Component</th>
<th>RCRA - D Series Wastes</th>
<th>RCRA - P Series Wastes</th>
<th>RCRA - U Series Wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc, bis(dimethylcarbamidithioato-kappaS, kappaS)-(T-4) 137-30-4 (76)</td>
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</table>

Pesticide Information

State Regulations
Not applicable

State Right-to-Know
Not applicable
16. Other Information

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HEALTH</th>
<th>flammability</th>
<th>Instability</th>
<th>Physical hazard</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>HEALTH</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Preparation Date: 12-Oct-2017
Revision date: 12-Oct-2017
Revision Summary: Add to system

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End of MSDS