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

· Product identifier
· Trade name: ACTICIDE RS
· Application of the substance / the preparation: Biocide for industrial and/or commercial use.
· Details of the supplier of the safety data sheet
· Supplier: Thor Specialties, Inc.
  56 Quarry Road
  Trumbull, CT 06611
  USA
  Phone: +1 203 3656530
  Fax: +1 203 3656537
· Competent person responsible for the Material Safety Data Sheet:
  Regulatory Affairs Department: Lynn P. Tordo, E-Mail: ltordo@thorsp.com
· Emergency telephone number:
  Emergency phone number (worldwide 24 hrs service): +49 6 21 60-4 33 33
  USA: In case of emergency call CHEMTREC 24 Hours at 800/424-9300 or international: +1-703-527-3887

2 Composition/information on ingredients

· Chemical characterization: Mixtures
· Description: Microbiocide based on isothiazolinones.

<table>
<thead>
<tr>
<th>Dangerous components:</th>
<th>55965-84-9</th>
<th>Mixture, containing 5-Chloro-2-methyl-2H-isothiazol-3-one and 2-Methyl-2H-isothiazol-3-one (3:1)</th>
<th>1.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H301; H311; H331; ✰ H314; ✰ H400; H410; ✰ H317</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

· Additional information:
The CAS No. of the single components are: CIT: 26172-55-4; MIT: 2682-20-4

3 Hazards identification

· Classification of the substance or mixture

☐ GHS05 Corrosion

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

☐ GHS07

H317 May cause an allergic skin reaction.

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC

☐ Corrosive
  Causes burns.

☒ Irritant
  May cause sensitization by skin contact.
Trade name: ACTICIDE RS

- Classification system:
  The classification of health and environmental hazards is based either on test results or on the conventional calculation method according to Articles 6 & 7 of Directive 1999/45/EC (DPD).

- Label elements
  - GHS label elements
    The product is classified and labelled according to the Globally Harmonized System (GHS).

- Hazard pictograms
  - GHS05
  - GHS07

- Signal word: Danger

- Hazard-determining components of labelling:
  Mixture, containing 5-Chloro-2-methyl-2H-isothiazol-3-one and 2-Methyl-2H-isothiazol-3-one (3:1)

- Hazard statements
  May be corrosive to metals.
  Causes severe skin burns and eye damage.
  May cause an allergic skin reaction.

- Precautionary statements
  Wear protective gloves/protective clothing/eye protection/face protection.
  Do not get in eyes, on skin, or on clothing.
  If ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  If eye irritation persists: Get medical advice/attention.
  If skin irritation or rash occurs: Get medical advice/attention.

- Classification system:
  - NFPA ratings (scale 0 - 4)
    - Health = 3
    - Fire = 0
    - Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    - Health = 3
    - Fire = 0
    - Reactivity = 0

**4 First aid measures**

- General information:
  In case of emergency call toll free (800) 424-9300. Have the product container or label with you when you call a Poison Control Center or doctor or going for treatment.

- If inhaled:
  Supply fresh air; consult doctor in case of symptoms.
  Move person to fresh air.
  If person is not breathing, call 911 or an ambulance, then give artificial respiraton, preferably mouth-to-mouth if possible.
If on skin or clothing:
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Destroy or thoroughly clean contaminated shoes. After contact with skin, wash immediately with plenty of water and alkaline soap (curd soap). Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing. Call a Poison Control Center or a doctor for treatment advice.

If in eyes:
Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a Poison Control Center or doctor for treatment advice. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

If swallowed:
IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. A person vomiting while lying on their back should be turned onto their side. Call a Poison Control Center or doctor immediately for treatment advice. Do not give anything by mouth to an unconscious person.

Note to physician: Probable mucosal damage may contraindicate the use of gastric lavage.

5 Firefighting measures

Suitable extinguishing agents: Water spray jet, extinguishing powder, CO2, foam.
For safety reasons unsuitable extinguishing agents: None
Special hazards arising from the substance or mixture
In case of fire, toxic incineration products may be released such as: Nitrogen oxides (NOx) Carbon monoxide (CO) Sulphur dioxide (SO2) Hydrogen chloride (HCl)

Protective equipment: Wear protective clothing and self-contained respiratory protective device.

Additional information
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective clothing. Keep unprotected persons away. When selecting the protective suit it has to be paid attention to a complete and safe protection of skin and mucous membrane. Impermeable protective clothes, protective boots made of neoprene, complete face protection, nitrile-rubber-gloves with long tops.

Environmental precautions:
Prevent from spreading (e. g. by enclosing with a ring of chemical absorbent). As the product is hazardous for the aquatic environment, it must be prevented from reaching surface water. Inform respective authorities in case of seepage into water course or sewage system.

Methods and material for containment and cleaning up:
Collect large amounts in suitable container. Cover the rest with absorbent, mix intensively and collect mechanically.
Trade name: ACTICIDE RS

Suitable binder: multi-purpose absorbent.
Dispose of contaminated binding material in accordance with local, state and federal regulations.
Surfaces can be decontaminated with a solution containing 5% sodium hydrosulfite and 5% sodium bicarbonate.
In case of a spill drained to the sewer collect contaminated water in suitable container and add 10% sodium bisulfite solution. Contact supplier for further instructions.

7 Handling and storage

Handling:

Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace.
Handle product in closed systems preferably.
Prevent contamination of the inhaled air by heating up the product or forming aerosols.
Load carefully, avoid splashes.
Compliance with the minimum requirements designed to guarantee a better standard of safety and health at work is essential to ensure the safety and health of workers.

Information about protection against explosions and fires: No special measures required.

Storage:

Requirements to be met by storerooms and receptacles:
Information about suitable materials for vessels and piping can be requested from our technical department (Tel.: 203-365-6530).
Store only in the original receptacle.

Information about storage in one common storage facility: Store away from foodstuffs.

Further information about storage conditions:
Prevent release to the environment by adequate secondary containment design and use of appropriate spill control procedures.

8 Exposure controls/personal protection

Additional information about design of technical systems: No further data; see item 7.
Components with limit values that require monitoring at the workplace: Not required.

Additional information: The lists that were valid during the creation were used as basis.

Personal protective equipment:

General protective and hygienic measures:
Avoid contact with the eyes and skin.
Wash hands thoroughly before breaks and at the end of work.
Provide skin protection plan.

Breathing equipment:
When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.
OV/N95 or OV/P100; organic vapors/prefilter (NIOSH Approval No. TC-84A-0699).

Protection of hands:
Chemical protective gloves according to DIN EN 374 with CE-labelling.

Before use check protective gloves for any damages like holes, cuts or tears.
Do not wear protective gloves longer than necessary.

Material of gloves Nitrile rubber, NBR
Material Safety Data Sheet
acc. to ISO/DIS 11014

Trade name: ACTICIDE RS

- Penetration time of glove material
  Penetration time depends on different criteria and may be determined by the manufacturer according to the standard DIN EN 374-3.
- Not suitable are gloves made of the following materials:
  Gloves for mechanical protection do not provide protection against chemicals.
- Eye protection:
  Face protection
- Body protection:
  Protective work clothing
  Apron
  Full head, face and neck protection

9 Physical and chemical properties

- General Information
- Appearance:
  Form: Liquid
  Color: pale blue, Green, Clear
- Odor: Mild
- pH-value at 20°C (68 °F):
  1.8 - 2.6
- Change in condition
  Melting point/Melting range: Not determined
  Boiling point/Boiling range: ca. 100°C (ca. 212 °F)
- Flash point: Not applicable
- Auto igniting: Product is not selfigniting.
- Danger of explosion: Product does not present an explosion hazard.
- Vapor pressure at 20°C (68 °F):
  27.2 hPa (20 mm Hg) (OECD 104)
- Density at 20°C (68 °F):
  1.022 - 1.032 g/cm3
- Solubility in / Miscibility with Water: Fully miscible.
- Other information
  Organic Volatiles (EPA Method 24A): 0 (Below detection limit)

10 Stability and reactivity

- Thermal decomposition / conditions to be avoided:
  Before handling, the product should not be diluted or mixed with other chemicals, in order to avoid any negative influences on the active ingredient(s).
- Minimum shelf life: 24 months from production date, if stored at a temperature of about 20°C
- Incompatible materials:
  Nucleophils
  Reducing agents
  Strong oxidising agents

(Contd. on page 6)
11 Toxicological information

- **Acute toxicity:**
  - **LD/LC50 values that are relevant for classification:**
    - Oral LD50 4467 mg/kg (rat)
    - Dermal LD50 > 5000 mg/kg (rat)

- **Primary irritant effect:**
  - **Target Organism - skin:** Caustic effect on skin and mucous membranes.
  - **Target Organism - eye:** Strong caustic effect.
  - **Sensitization:** Sensitization possible through skin contact.

- **Subacute to chronic toxicity:**
  - Non teratogenic (OECD 414 / EPA 83-3 a)

12 Ecological information

- **Acquatic toxicity:**
  - EC50 / 48 h 8 mg/l (Daphnia)
  - EC50 / 72 h 1.67 mg/l (Selenastrum capricornutum)
  - EC50 / 96 h 14.8 mg/l (rainbow trout)

- **Persistence and degradability**
  - **Method:** OECD 301 D (Closed-Bottle Test)
  - **Analyzing method:** Oxygen demand
  - **Degree of elimination:** The product ingredients can be readily eliminated in the sewage system.
  - **Biodegradability:** Degree of biological degradability: > 60%. The components are readily biodegradable.

- **Behavior in environmental systems:**
  - **Bioaccumulative potential**
    - Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.
    - log Kow -0.71 - +0.75; CIT/MIT

- **Ecotoxicological effects:**
  - **Behavior in sewage processing plants:**
    - EC50 7.9 mg/l (Activated Sludge)

- **Remark:** Depending on concentration, toxic effects on activated sludge organisms are possible.

- **AOX-indication:**
  - Can affect the AOX-value of the effluent water. The active ingredient is not persistent, it is degraded by separation of the chlorine atom.
  - Calculated AOX value: 0.26 %
13 Disposal considerations

- Waste treatment methods
  - Recommendation: Dispose in accordance with applicable Federal (RCRA), state and local regulations. Biocide or Pesticide wastes are acutely hazardous. Improper disposal or excess product or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Biocide/Pesticide or Environmental Control Agency, or the Hazardous Waste representative at your nearest EPA Regulation Office for guidance.

- Uncleaned packagings:
  - Recommendation: In accordance with label and federal and local regulations.

14 Transport information

- US DOT Ground Transport Hazard Class: 8
- Identification number: UN3265
- Packing group: III
- Proper shipping name (technical name): CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Mixture, containing 5-Chloro-2-methyl-2H-isothiazol-3-one and 2-Methyl-2H-isothiazol-3-one (3:1))

- Land transport ADR/RID (cross-border):
  - ADR/RID class: 8 (C3) Corrosive substances
  - Danger code (Kemler): 80
  - UN-Number: 3265
  - Packaging group: III
  - UN proper shipping name: 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Mixture, containing 5-Chloro-2-methyl-2H-isothiazol-3-one and 2-Methyl-2H-isothiazol-3-one (3:1))

- Maritime transport IMDG:
  - IMDG Class: 8
  - UN Number: 3265
  - Label: 8
  - Packaging group: III
Trade name: ACTICIDE RS

- EMS Number: F-A,S-B
- Marine pollutant: No
- Segregation groups: Acids
- Propper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Mixture, containing 5-Chloro-2-methyl-2H-isothiazol-3-one and 2-Methyl-2H-isothiazol-3-one (3:1))

Air transport ICAO-TI and IATA-DGR:

- ICAO/IATA Class: 8
- UN/ID Number: 3265
- Label: 8
- Packaging group: III
- Propper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Mixture, containing 5-Chloro-2-methyl-2H-isothiazol-3-one and 2-Methyl-2H-isothiazol-3-one (3:1))
- Remarks: Packing Instructions / max. net weight: Passenger aircraft: 852 / 5 L; Cargo aircraft: 856 / 60 L

UN "Model Regulation":
UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Mixture, containing 5-Chloro-2-methyl-2H-isothiazol-3-one and 2-Methyl-2H-isothiazol-3-one (3:1)), 8, III

15 Regulatory information

- EPA-Registration number: 67071-10
- Canada Pest Control Act Registration Number: pending
- SARA

Section 302 (extremely hazardous substances):
None of the ingredient is listed.

Section 313 (Specific toxic chemical listings):
None of the ingredients are listed at a concentration above the "de minimus" level.

TSCA (Toxic Substances Control Act):
All ingredients are listed.

Canadian Domestic Substances List (DSL):
All ingredients are listed.

Canadian Non Domestic Substance List (NDSL):
None of the ingredients is listed.

WHMIS: Class: E
Carcinogenic categories

- EPA (Environmental Protection Agency)
None of the ingredients is listed.

- IARC (International Agency for Research on Cancer)
None of the ingredients is listed.
## NTP (National Toxicology Program)
None of the ingredients is listed.

## TLV (Threshold Limit Value established by ACGIH)
None of the ingredients is listed.

## NIOSH (National Institute for Occupational Safety and Health)
None of the ingredients is listed.

## OSHA (Occupational Safety & Health Administration)
None of the ingredients is listed.

### GHS label elements
The product is classified and labelled according to the Globally Harmonized System (GHS).

#### Hazard pictograms

![GHS05](image)

![GHS07](image)

#### Signal word
Danger

#### Hazard-determining components of labelling:
Mixture, containing 5-Chloro-2-methyl-2H-isothiazol-3-one and 2-Methyl-2H-isothiazol-3-one (3:1)

#### Hazard statements
May be corrosive to metals.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

#### Precautionary statements
Wear protective gloves/protective clothing/eye protection/face protection.
Do not get in eyes, on skin, or on clothing.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.

### 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.

#### Training hints
US: Use only in accordance with EPA-approved label. Canada: Use only in accordance with PMRA-approved label.
Further information under the regulations of use can be taken from the Product Data Sheet and label.

#### Contact for technical information:
Biocides: info@ThorSp.com

#### Abbreviations and acronyms:
- PBT: persistent, bioaccumulative, toxic
- vPvB: very persistent, very bioaccumulative
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
Trade name: ACTICIDE RS

<table>
<thead>
<tr>
<th>IATA-DGR: Dangerous Goods Regulations by the &quot;International Air Transport Association&quot; (IATA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICAO: International Civil Aviation Organization</td>
</tr>
<tr>
<td>ICAO-TI: Technical Instructions by the &quot;International Civil Aviation Organization&quot; (ICAO)</td>
</tr>
<tr>
<td>ACGIH: American Conference of Governmental Industrial Hygienists</td>
</tr>
<tr>
<td>NFPA: National Fire Protection Association (USA)</td>
</tr>
<tr>
<td>HMIS: Hazardous Materials Identification System (USA)</td>
</tr>
<tr>
<td>LC50: Lethal concentration, 50 percent</td>
</tr>
<tr>
<td>LD50: Lethal dose, 50 percent</td>
</tr>
</tbody>
</table>

- * Data compared to the previous version altered.