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

- Trade name: ACTICIDE L 30
- Application of the substance / the preparation: Biocide for industrial and/or commercial use.
- Supplier: Thor Specialties, Inc.

2 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Microbiocide based on 2-Bromo-2-nitropropane-1,3-diol (bronopol).

3 Hazards identification

- Classification of the substance or mixture
  - GHS05 Corrosion
    - H290 May be corrosive to metals.
    - H318 Causes serious eye damage.
  - GHS09 Environment
    - H400 Very toxic to aquatic life.
  - GHS07
    - H302 Harmful if swallowed.
    - H315 Causes skin irritation.

- Classification according to Directive 67/548/EEC or Directive 1999/45/EC
  - Harmful
    - Harmful if swallowed.
Irritant

Irritating to skin. Risk of serious damage to eyes.

Dangerous for the environment

Very toxic to aquatic organisms.

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  GHS09

Signal word Danger

Hazard-determining components of labelling:

Bronopol

Hazard statements

May be corrosive to metals.
Harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.
Very toxic to aquatic life.

Precautionary statements

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection.

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.

Collect spillage.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

NFPA ratings (scale 0 - 4)

Health = 2
Fire = 1
Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 3
Fire = 1
Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

PBT: This mixture does not contain substances that meet the PBT criteria of REACH, annex XIII.
4 First aid measures

- **Description of 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:**
    Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respirator, preferably mouth-to-mouth if possible. Call a Poison Control Center or doctor for treatment advice. Supply fresh air; consult doctor in case of symptoms.
  - **If on skin or clothing:**
    Take off contaminated clothing. Rinse skin immediately with plenty of water and soap. If skin irritation occurs, get medical attention. 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 swallowed:**
    Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the Poison Control Center or doctor. Call a Poison Control Center or doctor immediately for treatment advice.
  - **Note to physician:** Probable mucosal damage may contraindicate the use of gastric lavage.

5 Firefighting measures

- **Extinguishing media**
- **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)
  - Bromine compounds such as HBr, Br2
- **Advice for firefighters**
- **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:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
  Suitable binder: multi-purpose absorbent.
  Dispose of contaminated binding material in accordance with local, state and federal regulations.

- **Reference to other sections** None

### 7 Handling and storage

- **Handling:**
  - **Precautions for safe handling**
    Ensure good ventilation/exhaustion at the workplace.
    Handle product in closed systems preferably.
    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.

- **Conditions for safe storage, including any incompatibilities**

- **Storage:**
  - **Requirements to be met by storerooms and receptacles:**
    Use polyolefin receptacles.
    Information about suitable materials for vessels and piping can be requested from our technical department (Tel.: 203-365-6530).

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

  - **Further information about storage conditions:**
    If the product crystallizes at low temperatures, it can be restored by slowly warming the product.
    The effectiveness is not affected hereby.
    Prevent release to the environment by adequate secondary containment design and use of appropriate spill control procedures.

  - **Sensitivity against frost:** Protect from frost.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

<table>
<thead>
<tr>
<th>Material</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>57-55-6 1,2-propylene glycol</td>
<td>WEEL 10 mg/m³</td>
</tr>
</tbody>
</table>

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

- **Exposure controls**

- **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
- **Not suitable are gloves made of the following materials**:
  Gloves for mechanical protection do not provide protection against chemicals.

**Eye protection:**
Goggles or face shield

**Body protection**: Protective work clothing

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**9 Physical and chemical properties**

- **Information on basic physical and chemical properties**
- **General Information**
  - **Appearance**:
    - **Form**: Liquid
    - **Color**: Clear
    - **Colorless
    - **Odor**: Characteristic
  - **pH-value at 20°C (68 °F)**: 2.0-4.0
  - **Change in condition**
    - **Melting point/Melting range**: Not determined
    - **Boiling point/Boiling range**: ca. 130°C (ca. 266 °F) (1013 mbar)
  - **Flash point**: 122°C (252 °F)
  - **Ignition temperature**: 371°C (700 °F)
  - **Auto igniting**: Product is not selfigniting.
  - **Danger of explosion**: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Explosion limits**:
  - **Lower**: 2.6 Vol %
  - **Upper**: 12.6 Vol %

- **Vapor pressure at 20°C (68 °F)**: 23 mbar
- **Density at 20°C (68 °F)**: 1.180-1.240 g/cm3
10 Stability and reactivity

- Reactivity
- Chemical stability
- 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
- Possibility of hazardous reactions: No dangerous reactions known.
- Hazardous decomposition products: None expected during normal storage, handling and use.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
  - LD/LC50 values that are relevant for classification:
    | Type  | Value       |
    |-------|-------------|
    | Oral  | ATE mix 694 mg/kg (rat) |
    | Dermal| ATE mix > 5000 mg/kg (rat) |

- Primary irritant effect:
  - Target Organism - skin: Irritant to skin and mucous membranes.
  - Target Organism - eye: Strong irritant with the danger of severe eye injury.

- Sensitization: Sensitizing effect by skin contact is possible by prolonged or repeated exposure.

- Subacute to chronic toxicity:
  Non teratogenic (OECD 414 / EPA 83-3 a)
  Non mutagenic (Ames-test OECD 471: In vitro genmutation study in bacteria).
  Non carcinogenic

12 Ecological information

- Toxicity
  - Ec50 / 48 h
    | Value       |
    |-------------|
    | 4.6 mg/l (Daphnia) |
    | 1.3 mg/l (Algae) |
    | > 100 mg/l (Bluegill sunfish) | > 100 mg/l (rainbow trout) |

- Persistence and degradability
  - Other information: The active ingredient(s) is (are) biodegradable up to the MIC for bacteria.

- Behavior in environmental systems:
- Bioaccumulative potential
  Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.
  log Kow 0.18; bronopol
Trade name: ACTICIDE L 30

(Contd. of page 6)

⋅ Ecotoxical effects:

⋅ Behavior in sewage processing plants:

52-51-7 Bronopol

EC50 > 50 mg/l (bacteria)

⋅ Remark:
Effluent water contaminated with low concentrations of active ingredients are not expected to affect
the performance of activated sludge treatment processes.

⋅ Additional ecological information:

⋅ COD-value: 860 mg O2/g product

⋅ AOX-indication:
Can affect the AOX-value of the effluent water.
AOX (DIN 38409 H 14): 1.8 %

⋅ According to the formulation contains the following heavy metals and compounds from the
EU guideline NO. 2006/11 EC:
None

⋅ General notes:
The product contains materials that are harmful to the environment.
Avoid transfer into the environment.

⋅ Results of PBT and vPvB assessment

⋅ PBT: This mixture does not contain substances that meet the PBT criteria of REACH, annex XIII.

⋅ vPvB: This mixture does not contain substances that meet the vPvB criteria of REACH, annex XIII.

13 Disposal considerations

⋅ Waste treatment methods

⋅ Recommendation:
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. (2-
BROMO-2-NITROPROPANE-1,3-DIOL)

⋅ Label

⋅ Land transport ADR/RID (cross-border):

⋅ ADR/RID class: 8 (C3) Corrosive substances

⋅ Danger code (Kemler): 80

⋅ UN-Number: 3265

(Contd. on page 8)
Trade name: ACTICIDE L 30

- Packaging group: III
- Special marking: Symbol (fish and tree)
- UN proper shipping name: 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2-BROMO-2-NITROPROPAINE-1,3-DIOL)

**Maritime transport IMDG:**

- IMDG Class: 8
- UN Number: 3265
- Label: 8
- Packaging group: III
- EMS Number: F-A,S-B
- Marine pollutant: Yes
  - Symbol (fish and tree)
- Segregation groups: Acids
- Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2-BROMO-2-NITROPROPAINE-1,3-DIOL)

**Air transport ICAO-TI and IATA-DGR:**

- ICAO/IATA Class: 8
- UN/ID Number: 3265
- Label: 8
- Packaging group: III
- Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2-BROMO-2-NITROPROPAINE-1,3-DIOL)
- Remarks:
  - Packing Instructions / Max. net weight Passenger aircraft: 818 / 5 L
  - Cargo aircraft: 820 / 60 L
- UN "Model Regulation": UN3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., 8, III
- Special precautions for user: Warning: Corrosive substances

**15 Regulatory information**

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - EPA-Registration number: 33753-20-67071
  - SARA
    - Section 302 (extremely hazardous substances):
      None of the ingredient is listed.
    - Section 313 (Specific toxic chemical listings):
      None of the ingredients is listed.
    - TSCA (Toxic Substances Control Act):
      All ingredients are listed.
Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 04/11/2011
Reviewed on 04/11/2011

Trade name: ACTICIDE L 30

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

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

- 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  GHS07  GHS09

- Signal word Danger

- Hazard-determining components of labelling:
  Bronopol

- Hazard statements
  May be corrosive to metals.
  Harmful if swallowed.
  Causes skin irritation.
  Causes serious eye damage.
  Very toxic to aquatic life.

- Precautionary statements
  Avoid release to the environment.
  Wear protective gloves/protective clothing/eye protection/face protection.
  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.
  Collect spillage.
  Dispose of contents/container in accordance with local/regional/national/international regulations.

- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.
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
  IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
  ICAO: International Civil Aviation Organization
  ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
  ACGIH: American Conference of Governmental Industrial Hygienists
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent

- * Data compared to the previous version altered.