

1.1. Product identifier

Product form : Mixture
 Product name. : **AM-68**
 Product code : 9380

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

Use of the substance/mixture : Microbicide

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin Corr. 1A H314

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US) :

- P260 - Do not breathe dust, mist, spray
- P301+P330+P331 - If swallowed: Rinse mouth. Do NOT induce vomiting
- P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- P304+P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
- P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON CENTER or doctor/physician
- P363 - Wash contaminated clothing before reuse
- P405 - Store locked up
- P264 - Wash all exposed body parts thoroughly after handling exposed body parts
- P280 - Wear eye protection, face protection, protective clothing, protective gloves eye protection, face protection, protective clothing, protective gloves
- P321 - Specific treatment - see First Aid measures on this label First aid measures
- 501 - Dispose of contents/container to proper treatment facilities in accordance with all applicable local, state & federal regulations
- Do not mix with acid or ammonia - may generate dangerous chlorine gas
- Do not mix with other products

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

Full text of H-phrases: see section 16

3.2. Mixture

| Name | Product identifier | % | GHS-US classification |
|---|--------------------|---------|-----------------------|
| sodium hypochlorite, solution, conc active chlorine=12.5% | (CAS No) 7681-52-9 | 50 - 60 | Skin Corr. 1A, H314 |
| sodium hydroxide, conc=50%, aqueous solution | (CAS No) 1310-73-2 | 2 - 5 | Skin Corr. 1A, H314 |

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|---|
| First-aid measures general | : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. |
| First-aid measures after inhalation | : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service. |
| First-aid measures after skin contact | : Wash immediately with lots of water (15 minutes)/shower. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital. |
| First-aid measures after eye contact | : Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist. |
| First-aid measures after ingestion | : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not give activated charcoal. Do not give chemical antidote. Immediately consult a doctor/medical service. Call Poison Information Centre (www.big.be/antigif.htm). Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital. |

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

| | |
|--------------------------------------|--|
| Symptoms/injuries | : Causes severe skin burns and eye damage. |
| Symptoms/injuries after inhalation | : Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. EXPOSURE TO HIGH CONCENTRATIONS: Possible laryngeal spasm/oedema. Risk of lung oedema. Respiratory difficulties. |
| Symptoms/injuries after skin contact | : Caustic burns/corrosion of the skin. |
| Symptoms/injuries after eye contact | : Corrosion of the eye tissue. Permanent eye damage. |
| Symptoms/injuries after ingestion | : Vomiting. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. Bleeding of the gastrointestinal tract. Shock. Disturbances of consciousness. FOLLOWING SYMPTOMS MAY APPEAR LATER: Tumours of the gastrointestinal tract. |
| Chronic symptoms | : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Fall of hair. Skin rash/inflammation. Gastrointestinal complaints. |

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|--------------------------------|---|
| Suitable extinguishing media | : Adapt extinguishing media to the environment. |
| Unsuitable extinguishing media | : No unsuitable extinguishing media known. |

5.2. Special hazards arising from the substance or mixture

| | |
|------------------|--|
| Fire hazard | : DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard". |
| Explosion hazard | : INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard". |
| Reactivity | : On burning: release of toxic and corrosive gases/vapours (chlorine, hydrogen chloride). Decomposes slowly on exposure to air: oxidation which increases fire hazard and release of toxic and corrosive gases/vapours (chlorine). This reaction is accelerated on exposure to light, on exposure to temperature rise and on exposure to (some) metals. Reacts violently with (some) acids/bases: release of toxic and corrosive gases/vapours (chlorine). |

5.3. Advice for firefighters

| | |
|---------------------------|---|
| Firefighting instructions | : Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it. |
|---------------------------|---|

Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Gloves. Face-shield. Corrosion-proof suit. Large spills/in enclosed spaces: compressed air apparatus. Large spills/in enclosed spaces: gas-tight suit. Reactivity hazard: compressed air/oxygen apparatus. Reactivity hazard: gas-tight suit.

Emergency procedures : Keep upwind. Mark the danger area. Seal off low-lying areas. Close doors and windows of adjacent premises. No naked flames. Wash contaminated clothes. Large spills/in confined spaces: consider evacuation. In case of reactivity hazard: consider evacuation.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. If reacting: dilute toxic gas/vapour with water spray. Take account of toxic/corrosive precipitation water. Heat exposure: dilute toxic gas/vapour with water spray.

Methods for cleaning up : Liquid spill: neutralize. Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Spill must not return in its original container. Damaged/cooled tanks must be emptied. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Keep the substance free from contamination. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

Hygiene measures : Wash all exposed body parts thoroughly after handling all exposed body parts.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.

Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: reducing agents. (strong) acids. (strong) bases. metals. organic materials.

Storage area : Store in a cool area. Keep out of direct sunlight. Store in a dry area. Store in a dark area. Keep locked up. Provide for a tub to collect spills. Keep only in the original container. Meet all legal requirements.

Special rules on packaging : SPECIAL REQUIREMENTS: closing. clean. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : SUITABLE MATERIAL: synthetic material. polyethylene. glass. stoneware/porcelain. MATERIAL TO AVOID: aluminium. zinc.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

sodium hydroxide, conc=50%, aqueous solution (1310-73-2)

| | | |
|-----------|------------------------------------|---------------------|
| USA ACGIH | ACGIH Ceiling (mg/m ³) | 2 mg/m ³ |
|-----------|------------------------------------|---------------------|

8.2. Exposure controls

| | |
|-----------------------------------|--|
| Personal protective equipment | : Avoid all unnecessary exposure. |
| Materials for protective clothing | : GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: neoprene. PVC. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: No data available. |
| Hand protection | : Gloves. |
| Eye protection | : Face shield. |
| Skin and body protection | : Corrosion-proof clothing. |
| Respiratory protection | : Wear gas mask with filter type B if conc. in air > exposure limit. High vapour/gas concentration: self-contained respirator. |
| Other information | : When using, do not eat, drink or smoke. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|-------------------------------------|
| Physical state | : Liquid |
| Appearance | : Clear liquid. |
| Colour | : Light yellow to yellow-brown. |
| Odour | : chlorine-like. |
| Odour threshold | : No data available |
| pH | : 12 - 13 |
| pH solution | : 11 - 12 |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : No data available |
| Freezing point | : < 0 °C |
| Boiling point | : > 100 °C |
| Flash point | : No data available |
| Self ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : No data available |
| Density | : 1.24 g/ml |
| Solubility | : Soluble in water. Water: 100 % |
| Log Pow | : No data available |
| Log Kow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available. |
| Oxidising properties | : No data available. |
| Explosive limits | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

On burning: release of toxic and corrosive gases/vapours (chlorine, hydrogen chloride). Decomposes slowly on exposure to air: oxidation which increases fire hazard and release of toxic and corrosive gases/vapours (chlorine). This reaction is accelerated on exposure to light, on exposure to temperature rise and on exposure to (some) metals. Reacts violently with (some) acids/bases: release of toxic and corrosive gases/vapours (chlorine).

10.2. Chemical stability

Unstable on exposure to light.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

strong acids. Strong bases. Do not mix with acid or ammonia - may generate dangerous chlorine gas. May be corrosive to metals.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. Thermal decomposition generates : Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

sodium hypochlorite, solution, conc active chlorine=12.5% (7681-52-9)

| | |
|-----------------------------------|---|
| LD50 oral rat | > 5000 mg/kg (Rat) |
| LD50 dermal rabbit | > 10000 mg/kg (Rabbit) |
| Skin corrosion/irritation | : Causes severe skin burns and eye damage. pH: 12 - 13 |
| Serious eye damage/irritation | : Not classified pH: 12 - 13 |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |

sodium hypochlorite, solution, conc active chlorine=12.5% (7681-52-9)

| | |
|---|--|
| IARC group | 3 - Not Classifiable |
| Reproductive toxicity | : Not classified |
| Specific target organ toxicity (single exposure) | : Not classified |
| Specific target organ toxicity (repeated exposure) | : Not classified |
| Aspiration hazard | : Not classified |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met. |
| Symptoms/injuries after inhalation | : Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. EXPOSURE TO HIGH CONCENTRATIONS: Possible laryngeal spasm/oedema. Risk of lung oedema. Respiratory difficulties. |
| Symptoms/injuries after skin contact | : Caustic burns/corrosion of the skin. |
| Symptoms/injuries after eye contact | : Corrosion of the eye tissue. Permanent eye damage. |
| Symptoms/injuries after ingestion | : Vomiting. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. Bleeding of the gastrointestinal tract. Shock. Disturbances of consciousness. FOLLOWING SYMPTOMS MAY APPEAR LATER: Tumours of the gastrointestinal tract. |
| Chronic symptoms | : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Fall of hair. Skin rash/inflammation. Gastrointestinal complaints. |

SECTION 12: Ecological information

12.1. Toxicity

sodium hydroxide, conc=50%, aqueous solution (1310-73-2)

| | |
|--------------------------------|---|
| LC50 fishes 1 | 45.4 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss) |
| LC50 other aquatic organisms 1 | 100 mg/l (48 h; Daphnia magna; Pure substance) |
| LC50 fish 2 | 189 mg/l (48 h; Leuciscus idus) |
| TLM fish 1 | 125 ppm (96 h; Gambusia affinis; Pure substance) |

| | |
|--|--|
| sodium hydroxide, conc=50%, aqueous solution (1310-73-2) | |
| TLM fish 2 | 99 mg/l (48 h; Lepomis macrochirus; Pure substance) |
| Threshold limit other aquatic organisms 1 | 100 mg/l (48 h; Daphnia magna; Pure substance) |
| sodium hypochlorite, solution, conc active chlorine=12.5% (7681-52-9) | |
| LC50 fishes 1 | > 0.20 mg/l (96 h; Pimephales promelas; Solution <50%) |

12.2. Persistence and degradability

| | |
|--|---|
| sodium hydroxide, conc=50%, aqueous solution (1310-73-2) | |
| Persistence and degradability | Biodegradability: not applicable. Not established. |
| Biochemical oxygen demand (BOD) | Not applicable |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| BOD (% of ThOD) | Not applicable |
| sodium hypochlorite, solution, conc active chlorine=12.5% (7681-52-9) | |
| Persistence and degradability | Biodegradability: not applicable. Low potential for adsorption in soil. |
| Biochemical oxygen demand (BOD) | Not applicable |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| BOD (% of ThOD) | Not applicable |

12.3. Bioaccumulative potential

| | |
|--|---|
| sodium hydroxide, conc=50%, aqueous solution (1310-73-2) | |
| Log Pow | -3.88 (Estimated value) |
| Bioaccumulative potential | Bioaccumulation: not applicable. Not established. |
| sodium hypochlorite, solution, conc active chlorine=12.5% (7681-52-9) | |
| Bioaccumulative potential | Bioaccumulation: not applicable. |

12.4. Mobility in soil

| | |
|--|---|
| sodium hypochlorite, solution, conc active chlorine=12.5% (7681-52-9) | |
| Ecology - soil | May be harmful to plant growth, blooming and fruit formation. |

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|--------------------------------|---|
| Waste disposal recommendations | : Remove waste in accordance with local, state and/or national regulations. Remove for physico-chemical/biological treatment. Do not discharge into surface water. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to proper treatment facilities in accordance with all applicable local, state & federal regulations. |
| Additional information | : LWCA (the Netherlands): KGA category 02. Hazardous waste according to Directive 2008/98/EC. |
| Ecology - waste materials | : Avoid release to the environment. |

SECTION 14: Transport information

| | |
|--------------------------------|--|
| In accordance with DOT | |
| Transport document description | : UN1791 Hypochlorite solutions, 8, II |
| UN-No.(DOT) | : 1791 |
| DOT NA no. | : UN1791 |
| DOT Proper Shipping Name | : Hypochlorite solutions |

Department of Transportation (DOT) Hazard Classes : 8 - Class 8 - Corrosive material 49 CFR 173.136
 Hazard labels (DOT) : 8 - Corrosive



Packing group (DOT) : II - Medium Danger
 DOT Special Provisions (49 CFR 172.102) : A7 - Steel packagings must be corrosion-resistant or have protection against corrosion.
 B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.
 B15 - Packagings must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance.
 IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.
 IP5 - IBCs must have a device to allow venting. The inlet to the venting device must be located in the vapor space of the IBC under maximum filling conditions.
 N34 - Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.
 T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)
 TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.
 TP24 - The portable tank may be fitted with a device to prevent the build up of excess pressure due to the slow decomposition of the hazardous material being transported. The device must be in the vapor space when the tank is filled under maximum filling conditions. This device must also prevent an unacceptable amount of leakage of liquid in the case of overturning.
 DOT Packaging Exceptions (49 CFR 173.xxx) : 154
 DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
 DOT Packaging Bulk (49 CFR 173.xxx) : 242
 DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L
 DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L
 DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
 DOT Vessel Stowage Other : 26 - Stow "away from" acids

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (E.C) No. 1272/2008 [CLP]

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

C; R35

R31

Full text of R-phrases: see section 16

15.2.2. National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

Other information : Issued By: EHS Administrator

Full text of H-phrases: see section 16:

| | |
|---------------|---|
| Skin Corr. 1A | Skin corrosion/irritation, Category 1A |
| H314 | Causes severe skin burns and eye damage |

NFPA health hazard

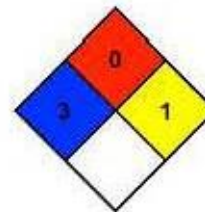
: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard

: 0 - Materials that will not burn.

NFPA reactivity

: 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



Revision Date: October 13, 2020

Revision Number 1

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.