## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

- Trade name PAK® 27 ALGAECIDE

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

**Uses of the Substance / Mixture**

- It is a violation of federal law to use this product in a manner inconsistent with its labeling.
- Active ingredient in pesticides, used only for formulation into end products which the EPA has approved.
- Contact your supplier for additional information

### 1.3 Details of the supplier of the safety data sheet

**Company**

SOLVAY CHEMICALS, INC.
3333 RICHMOND AVENUE
77098-3099, HOUSTON
USA
Tel: +1-800-7658292; +1-713-5256800
Fax: +1-713-5257804

### 1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

## SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

### 2.1 Classification of the substance or mixture

**HCS 2012 (29 CFR 1910.1200)**

| | |
|---|---|
| Acute toxicity, Category 4 | H302: Harmful if swallowed. |
| Serious eye damage, Category 1 | H318: Causes serious eye damage. |

### 2.2 Label elements

**HCS 2012 (29 CFR 1910.1200)**

**Pictogram**

**Signal Word**

- Danger

**Hazard Statements**

| | |
|---|---|
| - H302 | Harmful if swallowed. |
| - H318 | Causes serious eye damage. |

**Precautionary Statements**

Prevention

- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear eye protection/ face protection.

Response

- P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

### 2.3 Other hazards which do not result in classification

- H402: Harmful to aquatic life.
- H412: Harmful to aquatic life with long lasting effects.

## SECTION 3: Composition/information on ingredients

### 3.1 Substance

- Not applicable, this product is a mixture.

### 3.2 Mixture

- Chemical nature: Multi constituent substance
  Stabilized product

**Hazardous Ingredients and Impurities**

| Chemical Name | Identification number CAS-No. | Concentration [%] |
|---|---|---|
| Sodium carbonate peroxyhydrate | 15630-89-4 | >= 85 |
| Carbonic acid sodium salt (1:2) | 497-19-8 | <= 13 |
| Sodium silicate SiO2/Na2O | 1344-09-8 | <= 1.5 |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

**In case of inhalation**

- Move to fresh air.
- If symptoms persist, call a physician.

**In case of skin contact**

- Remove and wash contaminated clothing before re-use.
- Wash off with plenty of water.
- If symptoms persist, call a physician.

**In case of eye contact**

- Call a physician or poison control center immediately.
- In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

- In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).

**In case of ingestion**

- If victim is conscious:
- If swallowed, rinse mouth with water (only if the person is conscious).
- Do NOT induce vomiting.

- If victim is unconscious:
- Artificial respiration and/or oxygen may be necessary.

- Rinse mouth with water.
- Do NOT induce vomiting.
- If accidentally swallowed obtain immediate medical attention.
- Oxygen or artificial respiration if needed.

- If victim is conscious:
- If swallowed, rinse mouth with water (only if the person is conscious).
- Do NOT induce vomiting.

- If victim is unconscious:
- Artificial respiration and/or oxygen may be necessary.

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

**In case of inhalation**

**Effects**
- May cause nose, throat, and lung irritation.

**In case of skin contact**

**Effects**
- Prolonged skin contact may cause skin irritation.

**In case of eye contact**

**Symptoms**
- Redness
- Lachrymation
- Swelling of tissue

**Effects**
- Severe eye irritation
- Risk of serious damage to eyes.

**In case of ingestion**

**Symptoms**
- Severe irritation
- Nausea
- Abdominal pain
- Vomiting
- Diarrhea

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

- no data available

## SECTION 5: Firefighting measures

| | |
|---|---|
| **Flash point** | Not applicable |
| **Autoignition temperature** | no data available |
| **Flammability / Explosive limit** | no data available |

### 5.1 Extinguishing media

**Suitable extinguishing media**

- Water
- Water spray

**Unsuitable extinguishing media**

- None.

### 5.2 Special hazards arising from the substance or mixture

**Specific hazards during fire fighting**

- Oxidizing
- Oxygen released in thermal decomposition may support combustion
- Contact with combustible material may cause fire.
- Contact with flammables may cause fire or explosions.
- Risk of explosion if heated under confinement.

**Hazardous combustion products:**

- Oxygen

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.
- Cool containers/tanks with water spray.

**Further information**

- Keep product and empty container away from heat and sources of ignition.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**Advice for non-emergency personnel**

- Keep away from incompatible products

**Advice for emergency responders**

- Sweep up to prevent slipping hazard.

### 6.2 Environmental precautions

- Should not be released into the environment.
- Limited quantity
- Flush into sewer with plenty of water.
- Large quantities:
- If the product contaminates rivers and lakes or drains inform respective authorities.

### 6.3 Methods and materials for containment and cleaning up

- Sweep up and shovel into suitable containers for disposal.
- Do not mix waste streams during collection.
- Avoid dust formation.
- Treat recovered material as described in the section "Disposal considerations".
- All receiving equipment should be clean, vented, dry, labeled and made of material that is compatible with the product.
- Never return spills in original containers for re-use.

### 6.4 Reference to other sections

- no data available

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- Avoid dust formation.
- Ensure adequate ventilation.
- Keep away from heat and sources of ignition.
- Use only clean and dry utensils.
- Never return unused material to storage receptacle.
- Keep away from water.
- Keep away from incompatible products

**Hygiene measures**

- Use only in an area equipped with a safety shower.
- Eye wash bottle with pure water
- Handle in accordance with good industrial hygiene and safety practice for diagnostics.

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/Storage conditions**

- Keep in a dry place.
- Keep in a cool, well-ventilated place.
- Keep only in the original container.
- Keep away from direct sunlight.
- Store in a receptacle equipped with a vent.
- Keep away from heat.
- The container must be used exclusively for the product.
- Keep in container fitted with safety valve or vent.

- Avoid dust formation.
- Refer to protective measures listed in sections 7 and 8.
- In industrial installations, apply the rules for the prevention of major accidents (consult an expert).
- Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- To avoid thermal decomposition, do not overheat.

- Keep away from:
- Incompatible products

**Packaging material**

**Suitable material**

- Stainless steel
- Polyethylene
- Paper + PE coating.

### 7.3 Specific end use(s)

- Contact your supplier for additional information

## SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

### 8.1 Control parameters

**Components with workplace occupational exposure limits**

| Ingredients | Value type | Value | Basis |
|---|---|---|---|
| Sodium carbonate peroxyhydrate | TWA | 5 mg/m3 | Solvay Acceptable Exposure Limit |
| Carbonic acid sodium salt (1:2) | TWA | 10 mg/m3 | Solvay Acceptable Exposure Limit |

### 8.2 Exposure controls

**Control measures**

**Engineering measures**
- Avoid dust formation.
- Provide appropriate exhaust ventilation at places where dust is formed.
- Apply technical measures to comply with the occupational exposure limits.

**Individual protection measures**

**Respiratory protection**
- Use only respiratory protection that conforms to international/ national standards.
- Use NIOSH approved respiratory protection.
- Respirator with a dust filter

**Hand protection**
- Wear suitable gloves.
- Non-recommended materials: Leather, cotton

***Suitable material***
- PVC
- Neoprene
- Natural Rubber

**Eye protection**
- Chemical resistant goggles must be worn.

**Skin and body protection**
- Protective suit

**Hygiene measures**
- Use only in an area equipped with a safety shower.
- Eye wash bottle with pure water
- Handle in accordance with good industrial hygiene and safety practice for diagnostics.

## SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product

information phone number in Section 1 for its exact specifications.

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Appearance** | Form: powder<br>Physical state: solid<br>Color: white |
| **Odor** | odorless |
| **Odor Threshold** | no data available |
| **pH** | 10.4 - 10.6 ( 10.1 g/l) |
| **Boiling point/boiling range** | Not applicable |
| **Flash point** | Not applicable |
| **Evaporation rate (Butylacetate = 1)** | no data available |
| **Flammability (solid, gas)** | The product is not flammable. |
| **Flammability / Explosive limit** | Explosiveness:<br>Not explosive |
| **Autoignition temperature** | no data available |
| **Vapor pressure** | Not applicable |
| **Vapor density** | Not applicable |
| **Density** | Bulk density: 900 - 1,200 kg/m3 |
| **Solubility** | Water solubility :<br>150 g/l ( 68 °F (20 °C)) |
| **Partition coefficient: n-octanol/water** | Not applicable |
| **Thermal decomposition** | Self-Accelerating decomposition temperature (SADT)<br>> 131 °F (> 55 °C)<br>50 kg |
| **Viscosity** | Viscosity, dynamic : Not applicable |
| **Explosive properties** | no data available |
| **Oxidizing properties** | Oxidizing |

### 9.2 Other information

| | |
|---|---|
| **Henry's Constant** | Air |
| **Molecular weight** | 314.06 g/mol |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

- Decomposes when moist.
- Decomposes on heating.
- Potential for exothermic hazard

### 10.2 Chemical stability

- Potential for exothermic hazard
- Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

- Contact with combustible material may cause fire., Contact with flammables may cause fire or explosions., Risk of explosion if heated under confinement., Fire or intense heat may cause violent rupture of packages.

### 10.4 Conditions to avoid

- Exposure to moisture.
- To avoid thermal decomposition, do not overheat.

### 10.5 Incompatible materials

- Water
- Acids
- Bases
- Heavy metal salts
- Reducing agents
- Organic materials
- Flammable materials
- Combustible material

### 10.6 Hazardous decomposition products

- Oxygen

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Acute oral toxicity** | LD50 : 1,034 mg/kg - Rat |
| **Acute inhalation toxicity** | LC0 - 1 h > 4,580 mg/m3 - Rat |
| **Acute dermal toxicity** | LD 10 > 2,000 mg/kg - Rabbit |
| **Acute toxicity (other routes of administration)** | no data available |

| | |
|---|---|
| **Skin corrosion/irritation** | Rabbit<br>slight irritation |
| **Serious eye damage/eye irritation** | Rabbit<br>Risk of serious damage to eyes. |
| **Respiratory or skin sensitization** | no data available |

**Mutagenicity**

**Genotoxicity in vitro**

| | |
|---|---|
| Carbonic acid sodium salt (1:2) | By analogy<br><br>Ames test<br>with metabolic activation<br>Product is not considered to be genotoxic<br>Published data<br><br>Strain: Escherichia coli<br>without metabolic activation<br><br>negative<br>Product is not considered to be genotoxic<br>Published data |
| **Genotoxicity in vivo** | no data available |
| **Carcinogenicity** | no data available |

This product does not contain any ingredient designated as probable or suspected human carcinogens by:

NTP
IARC
OSHA
ACGIH

**Toxicity for reproduction and development**

**Toxicity to reproduction / fertility**

| | |
|---|---|
| Sodium silicate SiO2/Na2O | Repeated exposure - Rat<br>NOEL parent: > 159 mg/kg |

**Developmental Toxicity/Teratogenicity**

| | |
|---|---|
| Carbonic acid sodium salt (1:2) | Mouse , female<br>Application Route: Oral<br>NOAEL teratogenicity: >= 580 mg/kg<br>NOAEL maternal: >= 580 mg/kg<br>Method: according to a standardized method<br>no embryotoxic or teratogenic effects have been observed<br>Unpublished reports |

**STOT**

**STOT-single exposure**

| | |
|---|---|
| Carbonic acid sodium salt (1:2) | The substance or mixture is not classified as specific target organ toxicant, single exposure.<br>internal evaluation |
| Sodium silicate SiO2/Na2O | Routes of exposure: Inhalation<br>The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. |

**STOT-repeated exposure**

| | |
|---|---|
| Carbonic acid sodium salt (1:2) | The substance or mixture is not classified as specific target organ toxicant, repeated exposure.<br>internal evaluation |

**Aspiration toxicity** no data available

**Further information**

Harmful if swallowed.
Risk of serious damage to eyes.
Irritating to respiratory system and skin.

## SECTION 12: Ecological information

### 12.1 Toxicity

**Aquatic Compartment**

**Acute toxicity to fish**

LC50 : 71 mg/l - Pimephales promelas (fathead minnow)

NOEC - 96 h : 7.4 mg/l - Pimephales promelas (fathead minnow)

**Acute toxicity to daphnia and other aquatic invertebrates.**

EC50 : 4.9 mg/l - Daphnia pulex (Water flea)

NOEC - 48 h : 2 mg/l - Daphnia pulex (Water flea)

**Toxicity to aquatic plants**

Sodium silicate SiO2/Na2O

EC50 - 72 h : 345.4 mg/l - Algae : Desmodesmus subspicatus (Scenedesmus subspicatus)

EbC50 - 72 h : 207 mg/l - Algae : Desmodesmus subspicatus (Scenedesmus subspicatus)

### 12.2 Persistence and degradability

**Abiotic degradation**

**Stability in water** Medium, Water, Soil, Hydrolyzis
**Photodegradation** Not applicable

**Biodegradation**

**Biodegradability** The methods for determining biodegradability are not applicable to inorganic substances.

**Degradability assessment**

Carbonic acid sodium salt (1:2) The product is not considered to be rapidly degradable in the environment

**12.3 Bioaccumulative potential**

**Bioconcentration factor (BCF)** Not applicable

**12.4 Mobility in soil**

**Adsorption potential (Koc)**

Air
Not applicable

Water
considerable solubility and mobility

Soil/sediments
non-significant adsorption

**12.5 Results of PBT and vPvB assessment**

Carbonic acid sodium salt (1:2) Not applicable, inorganic substance

**12.6 Other adverse effects** no data available

**Ecotoxicity assessment**

**Acute aquatic toxicity**

Carbonic acid sodium salt (1:2) Not harmful to aquatic life (LC/EC50 > 100 mg/L)

**Chronic aquatic toxicity**

Carbonic acid sodium salt (1:2) Not classified due to data which are conclusive although insufficient for classification.

**Remarks** Contains a(many) hazardous substance(s) for the environment., Under massive form, product is biologically inert and non-degradable., Ingestion of solids may cause harm to wildlife due to intestinal mechanical blockage or starvation from false feeling of satiation.

## SECTION 13: Disposal considerations

**13.1 Waste treatment methods**

**Product Disposal**

- Dilute with plenty of water.
- Dispose of wastes in an approved waste disposal facility.
- Can be landfilled, when in compliance with local regulations.
- In accordance with local and national regulations.

**Waste Code**

- Environmental Protection Agency
- Hazardous Waste – YES

- RCRA Hazardous Waste (40 CFR 302)
- D001 - Ignitable waste – (I)

**Advice on cleaning and disposal of packaging**

- Clean container with water.
- Empty containers should be taken to an approved waste handling site for recycling or disposal.
- Uncleaned empty packaging
- Dispose of as unused product.
- In accordance with local and national regulations.

## SECTION 14: Transport information

Transportation status: IMPORTANT! Statements below provide additional data on listed transport classification.
The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

**DOT**

| | |
|---|---|
| **14.1 UN number** | UN 3378 |
| **14.2 Proper shipping name** | SODIUM CARBONATE PEROXYHYDRATE |
| **14.3 Transport hazard class**<br>Label(s) | 5.1<br>5.1 |
| **14.4 Packing group**<br>Packing group<br>ERG No | <br>III<br>140 |
| **14.5 Environmental hazards**<br>**Marine pollutant** | NO |

**TDG**

| | |
|---|---|
| **14.1 UN number** | UN 3378 |
| **14.2 Proper shipping name** | SODIUM CARBONATE PEROXYHYDRATE |
| **14.3 Transport hazard class**<br>Label(s) | 5.1<br>5.1 |
| **14.4 Packing group**<br>Packing group | <br>III |
| **14.5 Environmental hazards**<br>**Marine pollutant** | NO |

**NOM**

| | |
|---|---|
| **14.1 UN number** | UN 3378 |

| | |
|---|---|
| **14.2 Proper shipping name** | SODIUM CARBONATE PEROXYHYDRATE |
| **14.3 Transport hazard class** | 5.1 |
| Label(s) | 5.1 |
| **14.4 Packing group** | |
| Packing group | III |
| ERG No | 140 |
| **14.5 Environmental hazards** | NO |
| **Marine pollutant** | |

**IMDG**

| | |
|---|---|
| **14.1 UN number** | UN 3378 |
| **14.2 Proper shipping name** | SODIUM CARBONATE PEROXYHYDRATE |
| **14.3 Transport hazard class** | 5.1 |
| Label(s) | 5.1 |
| **14.4 Packing group** | |
| Packing group | III |
| **14.5 Environmental hazards** | NO |
| **Marine pollutant** | |
| **14.6 Special precautions for user** | |
| EmS | F-A , S-Q |

For personal protection see section 8.

**IATA**

| | |
|---|---|
| **14.1 UN number** | UN 3378 |
| **14.2 Proper shipping name** | SODIUM CARBONATE PEROXYHYDRATE |
| **14.3 Transport hazard class** | 5.1 |
| Label(s): | 5.1 |
| **14.4 Packing group** | |
| Packing group | III |
| Packing instruction (cargo aircraft) | 563 |
| Max net qty / pkg | 100.00 kg |
| Packing instruction (passenger aircraft) | 559 |
| Max net qty / pkg | 25.00 kg |
| **14.5 Environmental hazards** | NO |
| **14.6 Special precautions for user** | |

For personal protection see section 8.

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

## SECTION 15: Regulatory information

### 15.1 Notification status

| Inventory Information | Status |
|---|---|
| United States TSCA Inventory | - In compliance with the inventory |
| New Zealand. Inventory of Chemical Substances | - In compliance with the inventory |
| Canadian Domestic Substances List (DSL) | - In compliance with the inventory |
| Australia Inventory of Chemical Substances (AICS) | - In compliance with the inventory |
| Japan. CSCL - Inventory of Existing and New Chemical Substances | - In compliance with the inventory |
| Korea. Korean Existing Chemicals Inventory (KECI) | - In compliance with the inventory |
| China. Inventory of Existing Chemical Substances in China (IECSC) | - In compliance with the inventory |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS) | - In compliance with the inventory |

### 15.2 Federal Regulations

**US. EPA EPCRA SARA Title III**

**SARA Hazard Designation Sections 311/312 (40 CFR 370)**

| | |
|---|---|
| Fire Hazard | yes |
| Reactivity Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Acute Health Hazard | no |
| Chronic Health Hazard | no |

**Section 313 Toxic Chemicals (40 CFR 372.65)**
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)**
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)**
This material does not contain any components with a SARA 302 RQ.

**Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)**
This material does not contain any components with a section 304 EHS RQ.

**US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)**

This material does not contain any components with a CERCLA RQ.

### 15.3 State Regulations

**US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)**

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

## SECTION 16: Other information

**NFPA (National Fire Protection Association) - Classification**

| | |
|---|---|
| Health | 2 moderate |
| Flammability | 0 minimal |
| Instability or Reactivity | 1 slight |
| Special Notices | OX Oxidizer |

**HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification**

| | |
|---|---|
| Health | 2 moderate |
| Flammability | 0 minimal |
| Reactivity | 1 slight |
| PPE | Determined by User; dependent on local conditions |

**Further information**

- Product evaluated under the US GHS format.

**Date Prepared:** 04/21/2015

| | | |
|---|---|---|
| - | ACGIH | American Conference of Governmental Industrial Hygienists |
| - | OSHA | Occupational Safety and Health Administration |
| - | NTP | National Toxicology Program |
| - | IARC | International Agency for Research on Cancer |
| - | NIOSH | National Institute for Occupational Safety and Health |