

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
Serious eye damage, Category 1

H302: Harmful if swallowed.
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**

PAK® 27 ALGAEICIDE

Revision Date 04/21/2015

- 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 SiO ₂ /Na ₂ O	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

<u>Flash point</u>	Not applicable
<u>Autoignition temperature</u>	no data available
<u>Flammability / Explosive limit</u>	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/m ³	Solvay Acceptable Exposure Limit
Carbonic acid sodium salt (1:2)	TWA	10 mg/m ³	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

<u>Appearance</u>	<u>Form:</u> powder <u>Physical state:</u> solid <u>Color:</u> white
<u>Odor</u>	odorless
<u>Odor Threshold</u>	no data available
<u>pH</u>	10.4 - 10.6 (10.1 g/l)
<u>Boiling point/boiling range</u>	Not applicable
<u>Flash point</u>	Not applicable
<u>Evaporation rate (Butylacetate = 1)</u>	no data available
<u>Flammability (solid, gas)</u>	The product is not flammable.
<u>Flammability / Explosive limit</u>	<u>Explosiveness:</u> Not explosive
<u>Autoignition temperature</u>	no data available
<u>Vapor pressure</u>	Not applicable
<u>Vapor density</u>	Not applicable
<u>Density</u>	<u>Bulk density:</u> 900 - 1,200 kg/m ³
<u>Solubility</u>	<u>Water solubility :</u> 150 g/l (68 °F (20 °C))
<u>Partition coefficient: n-octanol/water</u>	Not applicable
<u>Thermal decomposition</u>	Self-Accelerating decomposition temperature (SADT) > 131 °F (> 55 °C) 50 kg
<u>Viscosity</u>	<u>Viscosity, dynamic :</u> Not applicable
<u>Explosive properties</u>	no data available
<u>Oxidizing properties</u>	Oxidizing

9.2 Other information

<u>Henry's Constant</u>	Air
<u>Molecular weight</u>	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

<u>Skin corrosion/irritation</u>	Rabbit slight irritation
<u>Serious eye damage/eye irritation</u>	Rabbit Risk of serious damage to eyes.
<u>Respiratory or skin sensitization</u>	no data available
<u>Mutagenicity</u>	
Genotoxicity in vitro Carbonic acid sodium salt (1:2)	By analogy Ames test with metabolic activation Product is not considered to be genotoxic Published data Strain: Escherichia coli without metabolic activation negative Product is not considered to be genotoxic Published data
Genotoxicity in vivo	no data available
<u>Carcinogenicity</u>	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
NOEL parent: > 159 mg/kg

Developmental Toxicity/Teratogenicity

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

Sodium silicate SiO₂/Na₂O

Routes of exposure: Inhalation
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.
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 plantsSodium 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, Hydrolyzsis

Photodegradation

Not applicable

Biodegradation

PAK® 27 ALGAECIDE

Revision Date 04/21/2015

Biodegradability	The methods for determining biodegradability are not applicable to inorganic substances.
<u>Degradability assessment</u> 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	5.1
Label(s)	5.1
14.4 Packing group	
Packing group	III
ERG No	140
14.5 Environmental hazards	NO
Marine pollutant	

TDG

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	

NOM

14.1 UN number	UN 3378
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PAK® 27 ALGAECIDE

Revision Date 04/21/2015

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

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.