

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

- Trade name SOLVair® Select 350

1.2 Relevant identified uses of the substance or mixture and uses advised against**Uses of the Substance / Mixture**

- Purifying flue gas

1.3 Details of the supplier of the safety data sheet**Company**

SOLVAY CHEMICALS, INC.
3737 Buffalo Speedway,
Suite 800,
Houston, TX 77098
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)**

Eye irritation, Category 2B

H320: Causes eye irritation.

2.2 Label elements**HCS 2012 (29 CFR 1910.1200)****Signal Word**

- Warning

Hazard Statements

- H320 Causes eye irritation.

Precautionary Statements**Prevention**

- P264 Wash skin thoroughly after handling.

Response

- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.

Additional Labeling

- The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 5 %

2.3 Other hazards which do not result in classification

None identified

SECTION 3: Composition/information on ingredients**3.1 Substance**

- Not applicable, this product is a mixture.

3.2 Mixture**Hazardous Ingredients and Impurities**

Chemical name	Identification number CAS-No.	Concentration [%]
Carbonic acid sodium salt (1:1)	144-55-8	>= 95

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**

- Remove to fresh air.

In case of skin contact

- Wash off with plenty of water.

In case of eye contact

- Rinse thoroughly with plenty of water, also under the eyelids.
- If eye irritation persists, consult a specialist.

In case of ingestion

- If a large amount is swallowed, get medical attention.
- If victim is conscious:
 - If swallowed, rinse mouth with water (only if the person is conscious).
- If victim is unconscious:
 - Not applicable

4.2 Most important symptoms and effects, both acute and delayed**In case of inhalation****Effects**

- Mechanical irritation from the particulates generated by the product.

In case of skin contact**Effects**

- No hazards to be specially mentioned.

Repeated or prolonged exposure

- Contact with dust can cause mechanical irritation or drying of the skin.

In case of eye contact**Effects**

- Mechanical irritation from the particulates generated by the product.

In case of ingestion**Effects**

- Ingestion may cause gastrointestinal irritation, nausea, vomiting and 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

The product is not flammable.

Flammability / Explosive limit

Lower flammability/explosion limit : The product is not flammable.

5.1 Extinguishing media**Suitable extinguishing media**

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

- None.

5.2 Special hazards arising from the substance or mixture**Specific hazards during fire fighting**

- Not combustible.

Hazardous combustion products:

- none

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.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures****Advice for non-emergency personnel**

- Evacuate personnel to safe areas.
- Avoid dust formation.

Advice for emergency responders

- Sweep up to prevent slipping hazard.
- Prevent further leakage or spillage.

6.2 Environmental precautions

- Do not flush into surface water or sanitary sewer system.
- Prevent any mixture with an acid into the sewer/drain (gas formations).

6.3 Methods and materials for containment and cleaning up

- Sweep up and shovel into suitable containers for disposal.
- Avoid dust formation.
- Keep in properly labeled containers.
- Keep in suitable, closed containers for disposal.
- Treat recovered material as described in the section "Disposal considerations".

- Keep in suitable, closed containers for disposal.
- Pick up and transfer to properly labeled containers.

6.4 Reference to other sections

- no data available

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Minimize dust generation and accumulation.
- Avoid contact with skin and eyes.
- Ensure adequate ventilation.
- Keep away from incompatible products

Hygiene measures

- When using do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Keep in a dry place.
- Store in original container.
- Keep container closed.

- Keep in properly labeled containers.

- Avoid dust formation.
- Refer to protective measures listed in sections 7 and 8.

- Keep away from:
 - Incompatible products

Packaging material

Suitable material

- Paper.
- Polyethylene

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
Particles not otherwise specified (PNOS)			National Institute for Occupational Safety and Health Includes all inert or nuisance dusts, whether mineral, inorganic, not listed specifically in 1910.1000., See Appendix D - Substances with No Established RELs
Particles not otherwise specified (PNOS)	TWA	15 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants Form of exposure : total dust All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.
Particles not otherwise specified (PNOS)	TWA	5 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants Form of exposure : respirable fraction All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.
Particles not otherwise specified (PNOS)	TWA	10 mg/m3	American Conference of Governmental Industrial Hygienists Form of exposure : Inhalable fraction
Particles not otherwise specified (PNOS)	TWA	3 mg/m3	American Conference of Governmental Industrial Hygienists Form of exposure : Respirable fraction
Carbonic acid sodium salt (1:1)	TWA	10 mg/m3	Solvay Acceptable Exposure Limit

8.2 Exposure controls

Control measures

Engineering measures

- Ensure adequate ventilation.
- Provide appropriate exhaust ventilation at places where dust is formed.
- Refer to protective measures listed in sections 7 and 8.
- 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.
- Effective dust mask

Hand protection

- Wear suitable gloves.

Eye protection

- Dust proof goggles, if dusty.

Skin and body protection

- None.

Hygiene measures

- When using do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

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>	Form: crystalline, powder
	Physical state: solid
	solid
	Color: white
	white

Odor odorless

Odor Threshold no data available

Molecular weight 84.02 g/mol

pH 8.6 (ca. 52 g/l)

Melting point/freezing point **Melting point/range:** ()
Decomposition: yes
 Not applicable

Initial boiling point and boiling range **Boiling point/boiling range:** ()
Thermal decomposition: yes
 Not applicable

Flash point Not applicable

Evaporation rate (Butylacetate = 1) no data available

Flammability (solid, gas) no data available

Flammability (liquids) no data available

Flammability / Explosive limit **Lower flammability/explosion limit:**
Type: Lower explosion limit
 The product is not flammable.

Explosiveness:
 Not explosive

<u>Autoignition temperature</u>	The product is not flammable.
<u>Vapor pressure</u>	Not applicable
<u>Vapor density</u>	Not applicable
<u>Density</u>	<u>Bulk density:</u> 500 - 1,200 kg/m ³
<u>Relative density</u>	no data available
<u>Solubility</u>	<u>Water solubility:</u> 96 g/l (68 °F (20 °C)) <u>Solubility in other solvents:</u> Other : soluble Alcohol : slightly soluble
<u>Partition coefficient: n-octanol/water</u>	Not applicable
<u>Decomposition temperature</u>	> 140 °F (> 60 °C)
<u>Viscosity</u>	<u>Viscosity, dynamic :</u> 1.2 mPa.s
<u>Explosive properties</u>	no data available
<u>Oxidizing properties</u>	Not considered as oxidizing.

9.2 Other information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

- no data available

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- no data available

10.4 Conditions to avoid

- Extremes of temperature and direct sunlight.
- Exposure to moisture.
- To avoid thermal decomposition, do not overheat.

10.5 Incompatible materials

- Acids

10.6 Hazardous decomposition products

- none

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity****Acute oral toxicity** LD50 : > 4,000 mg/kg - Rat**Acute inhalation toxicity** LC50 > 4.74 mg/l - Rat**Acute dermal toxicity**

Carbonic acid sodium salt (1:1) no data available

Acute toxicity (other routes of administration) no data available**Skin corrosion/irritation**Rabbit
Mild skin irritation**Serious eye damage/eye irritation**Rabbit
Mild eye irritation**Respiratory or skin sensitization**

no data available

Mutagenicity**Genotoxicity in vitro**in vitro test
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.**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** no data available**Developmental Toxicity/Teratogenicity**Various species
Gavage
Test period: 10 days
NOAEL teratogenicity: 330 mg/kg
Did not show teratogenic effects in animal experiments.

STOT**STOT-single exposure**

Carbonic acid sodium salt (1:1)

Routes of exposure: Oral, Inhalation

The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.
internal evaluation**STOT-repeated exposure**

no observed effect

Aspiration toxicity

no data available

Further information

Health injuries are not known or expected under normal use.

SECTION 12: Ecological information**12.1 Toxicity****Aquatic Compartment****Acute toxicity to fish**

LC50 - 96 h : 7,700 mg/l - Oncorhynchus mykiss (rainbow trout)

NOEC - 96 h : 2,300 mg/l - Oncorhynchus mykiss (rainbow trout)

LC50 - 96 h : 7,100 mg/l - Lepomis macrochirus (Bluegill sunfish)

NOEC - 96 h : 5,200 mg/l - Lepomis macrochirus (Bluegill sunfish)

Acute toxicity to daphnia and other aquatic invertebrates.

EC50 - 48 h : 4,100 mg/l - Daphnia magna (Water flea)

NOEC - 48 h : 3,100 mg/l - Daphnia magna (Water flea)

Toxicity to aquatic plants

no data available

Toxicity to microorganisms

no data available

Chronic toxicity to fish

no data available

Chronic toxicity to daphnia and other aquatic invertebrates.

Carbonic acid sodium salt (1:1)

NOEC: > 576 mg/l - 21 Days - Daphnia magna (Water flea)
semi-static test

Analytical monitoring: no

Method: OECD Test Guideline 211

Highest concentration tested

Published data

No adverse chronic effect observed up to and including the threshold of 1 mg / L.

Chronic Toxicity to aquatic plants no data available

12.2 Persistence and degradability

Abiotic degradation

Stability in water

hydrolyzes
Medium, Water, acid/base equilibrium as a function of pH, Degradation products:,
carbonic acid/bicarbonate/carbonate

Physical- and photo-chemical elimination

no data available

Biodegradation

Biodegradability

The methods for determining the biological degradability are not applicable to
inorganic substances.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

Carbonic acid sodium salt (1:1)

Not applicable, inorganic substance

Bioconcentration factor (BCF)

Not applicable

12.4 Mobility in soil

Adsorption potential (Koc)

Water/soil/sediments
Solubility(ies)

Water/soil/sediments
Mobility

Known distribution to environmental compartments

no data available

12.5 Results of PBT and vPvB assessment Not applicable

12.6 Other adverse effects no data available

Ecotoxicity assessment

Acute aquatic toxicity

Carbonic acid sodium salt (1:1) Not harmful to aquatic life (LC/LL50, EC/EL50 > 100 mg/L)

Chronic aquatic toxicity

Carbonic acid sodium salt (1:1) No adverse chronic effect observed up to and including the threshold of 1 mg / L.

Remarks

Ecological injuries are not known or expected under normal use.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- Contact waste disposal services.
- If recycling is not practicable, dispose of in compliance with local regulations.
- or
- Dilute with plenty of water.
- Neutralize with acid.
- In accordance with local and national regulations.

Waste Code

- Environmental Protection Agency
- Hazardous Waste – NO

Advice on cleaning and disposal of packaging

- To avoid treatments, as far as possible, use dedicated containers.
- or
- Clean container with water.
- Dispose of rinse water in accordance with local and national regulations.
- The empty and clean containers are to be reused in conformity with regulations.
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

SECTION 14: Transport information

DOT

not regulated

TDG

not regulated

NOM

not regulated

IMDG

not regulated

IATA

not regulated

P01000027892

Version : 1.04 / US (Z8)

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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	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- All components on composite list considered for transfer
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory
EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH)	- If product is purchased from Solvay in Europe it is in compliance with REACH, if not please contact the supplier.

15.2 Federal Regulations

US. EPA EPCRA SARA Title III

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	1 slight
Flammability	0 minimal
Instability or Reactivity	0 minimal
Special Notices	None

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

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

Further information

- Product evaluated under the US GHS format.

Date Prepared: 03/17/2017

Key or legend to abbreviations and acronyms used in the safety data sheet

- TWA 8-hour, time-weighted average
- SAEL Solvay Acceptable Exposure Limit
- 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.