

Solvay Chemicals

technical

P U B L I C A T I O N



Safety & Handling SOLVAir™ Select 200

Introduction

Solvay Chemicals, Inc. produces SOLVAir™ Select 200, a natural sodium sesquicarbonate, at the Green River, Wyoming processing facility.

SOLVAir™ Select 200 Physical Properties Table

Chemical Formula	$\text{Na}_2\text{CO}_3 \cdot \text{NaHCO}_3 \cdot 2\text{H}_2\text{O}$
Bulk Density (minimum)	41 lb/ft ³
Bulk Density (loose)	49 lb/ft ³
Bulk Density (@40 PSI)	77 lb/ft ³
Solubility in Water	20% maximum @ 30°C
% Volatile by Weight	29.6%
Median Diameter (v)	33 microns
Angle of Repose	<5° in fluid state to negative angle of repose after 66 hours

Safe Handling

WARNING: DO NOT MIX SOLVAIR SELECT 200 WITH HYDRATED LIME. THE RESULTING MIXTURE WILL REACT WITH MOISTURE AND PRODUCE SODIUM HYDROXIDE. SODIUM HYDROXIDE IS A STRONG CORROSIVE BASE (pH =14).

Protection and Maintenance

Safe handling of Select 200 is important due to the mild corrosiveness of the product.

Select 200, when exposed to moisture, is a mild base (pH of 10.1) which may cause minor eye and skin irritation. Personal protective equipment required:

- **Outer protective clothing:** Wear protective clothing, including boots, pants and long sleeves.
- **Eye protection:** Wear safety glasses or goggles with significant dust. DO NOT WEAR CONTACT LENSES, EVEN WITH EYE PROTECTION.
- **Respiratory protection:** In case of significant dust, a NIOSH-approved respirator should be worn. Wear dust mask during normal handling of dry product.
- **Training:** Only operators trained in the proper use of personal protective equipment should be allowed to handle Select 200. Operators required to wear respirators should be clean-shaven and be fit-tested for the respirator.

Solvay Chemicals, Green River, Wyoming.

- **Maintenance:** An effective respirator maintenance program consists of inspection, repair, storage, decontamination and disposal. All of these elements need to be adhered to for the respirator to function properly.
- **Exposure level guidelines:** Exposure to minor amounts of Select 200 may cause slight irritation to the skin and eyes. Excessive eye exposure requires the immediate flushing of the eyes and surrounding area for at least 15 minutes.

Exposure Level Guidelines

Product Information	OSHA 8 hr TLV
Select 200	15 mg/m3 (total dust)**

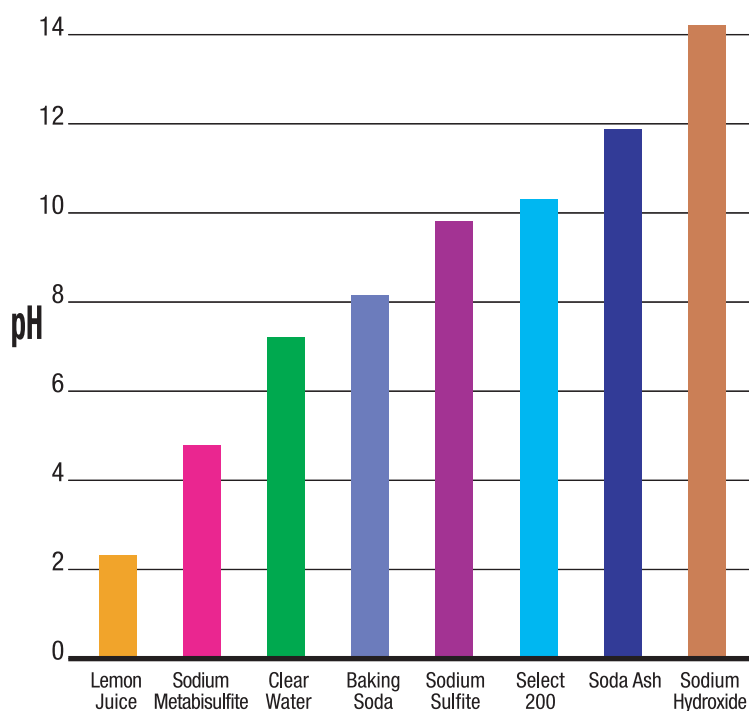
**No OSHA exposure standard exists for Solvair Select 200. Therefore, nuisance dust exposure limits apply.

Product Information

Solvair Select 200 is an odorless, white to off-white powder. Exposure can cause minor eye and skin irritation. This product also will react with lime and water to release heat and form sodium hydroxide, a strong corrosive material.

Product Composition

Sodium Sesquicarbonate	Formula	CAS #	DOT #	%
Chemical Formula	$\text{Na}_2\text{CO}_3 \cdot \text{NaHCO}_3 \cdot 2\text{H}_2\text{O}$	533-96-0	NA	98
Silica, Crystalline Quartz	SiO_2	14808-60-7	NA	<0.4
H ₂ O Insolubles	NA	NA	NA	2



Safety Equipment

Safety showers: Personnel working with Select 200 should have a safety shower located nearby to provide a minimum of 15 minutes of water deluge.



Safety eyewash stations: Eye wash stations are important due to the irritation product poses to the eyes.



Loading and Transport

The chart below summarizes the various shipping packages for Select 200.

Product Description	Container Type	Product Weight
Select 200	Polypropylene Super Sack Bulk Bag	2,000 lbs
Select 200	Bulk Pneumatic Truck	25 - 35 tons
Select 200	Bulk Pressure Differential Hopper Car	100 tons

Truck and railcar unloading procedure

Personnel unloading Select 200 should wear the proper personal protective equipment (see section about Protection and Maintenance).

Storage

Storage of Select 200 requires special care due to its reactivity with lime, water and acids.

Bagged storage

Packaged product should be stored in its original containers in a well ventilated, dry warehouse. Product should never be stored near lime, acids, water, or oxidizing materials. Due to the fact that Select 200 compacts when stacked, it is recommended that it be stored one pallet high. When under compression, it forms lumps that may be difficult to break up thus causing restricted flow during unloading.

Bulk storage

Select 200 is a fine cohesive powder that is difficult to handle without proper bulk storage design. A Jenike and Johanson Inc. flow properties test report for it is available on request from Solvay Chemicals. The Jenike and Johanson Inc. flow properties test report defines bulk storage design parameters. Excessive vibration or prolonged storage of Select 200 will require external forces to initiate flow. These external forces will be in the form of bin dischargers and aeration at the bottom of the storage bin. Avoid use of damp air (-40°F dew point or lower is best) for aeration at the bottom of the storage bin or in the baghouse. The continuous use of vibrators is not recommended and may lead to compaction of the material. Avoid contact with strong alkali (lime) by completely cleaning any residual material in the existing storage vessel before adding any Select 200 product. Leaks in storage bins must be sealed to prevent contamination from wet weather. In order to distinguish between Select 200 and lime, verify the pH of the two materials. Select 200 is very soluble compared to lime and limestone.

Safety considerations

Wash exposed areas immediately after skin or eye contact and before eating, drinking, using tobacco products or using the restroom. Exposure can cause minor irritation to skin and eyes.



Responsible Care®
Good Chemistry at Work

Emergency Response

Material Safety Data Sheet

For additional information on Select 200, refer to the MSDS. Contact Solvay Chemicals Customer Service @ 800-443-2785 to receive safety and response information.

Chemtrec, Inc.

Solvay Chemicals is an active participant in the American Chemistry Council (ACC). In the event you require emergency response for this or any other chemical emergency, call CHEMTREC at 800-424-9300.

Chemnet

In addition to CHEMTREC, Solvay Chemicals also participates in CHEMNET that provides access to hazardous material emergency response teams. Based upon the extent of the emergency, CHEMNET teams can be dispatched to the location of the spill. To initiate CHEMNET, contact the CHEMTREC emergency phone number (800-424-9300).

Disposal

If classified as a waste, SOLVAir Select 200 is not a hazardous waste under 40 CFR 261. Residual Select 200 should be removed from containers prior to disposal. Select 200 waste should be disposed in an approved disposal facility in accordance with applicable environmental laws and regulations. State and local environmental regulations may be more restrictive than federal requirements. During clean-up operations, wear the appropriate protective clothing (see section about Personal Protective Equipment). Keep water away from the area of release. Stop or control the spill without undue risk to personnel. Shovel any dry material into a suitable clean, dry container.

Solvay Chemicals, Inc.
Administration/Sales/Marketing
3333 Richmond Avenue
Houston, Texas 77098
Telephone: 713/525-6500
Fax: 713/525-7805
1-800-SOLVAY-C (800-765-8292)
www.solvaychemicals.us/solvair

Mailing Address:
P.O. Box 27328
Houston, Texas 77227

Customer Service:
Telephone: 713/525-6868
Fax: 713/525-7880
1-800-443-2785

This product has relatively small amounts of crystalline silica quartz with concentrations generally less than 2 percent. Repeated exposure to respirable size particles of crystalline silica can cause adverse health effects such as silicosis (a progressive lung disease) and possibly cancer. Product contains a chemical known to the State of California to cause cancer.

BEFORE USING, SEE MATERIAL SAFETY DATA SHEET (MSDS) FOR THIS PRODUCT
C.A.S. NUMBER: 533-96-0 (Sodium Sesquicarbonate)

To our actual knowledge, the information contained herein is accurate as of the date of this document. However, neither Solvay Chemicals, Inc. nor any of its affiliates makes any warranty, express or implied, or accepts any liability in connection with this information or its use. This information is for use by technically skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other substance or any other process. This is not a license under any patent or other proprietary right. The user alone must finally determine suitability of any information or material for any contemplated use in compliance with applicable law, the manner of use and whether any patents are infringed. This information gives typical properties only and is not to be used for specification purposes. Solvay Chemicals, Inc. reserves the right to make additions, deletions or modifications to the information at any time without prior notification.

Copyright 2005/2006, Solvay Chemicals, Inc. All Rights Reserved. CGR# 3390

**Solvay
Chemicals**



a Passion for Progress®