

What's Trona?

A trona fact sheet from SOLVAir Solutions



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1. What is trona?

- Trona is a naturally occurring mineral - Sodium Sesquicarbonate: $\text{NaHCO}_3 \cdot \text{Na}_2\text{CO}_3 \cdot 2(\text{H}_2\text{O})$.
- Trona is used primarily to make soda ash (Na_2CO_3) by calcining (heating) the trona to very high temperatures and converting it to sodium carbonate.
- Trona's other uses are air pollution control, enhanced gold recovery and animal feed.

2. What are the major markets for trona?

- **Air pollution control:** Trona is used by industries as varied as glass manufacturing, cement production, waste incineration, gold and other precious metal refining, petroleum refining, pulp & paper, and coal-fired electric power generation. Trona effectively removes acid gases such as oxides of sulfur (SO_2 and SO_3), hydrochloric acid (HCl), and hydrofluoric acid (HF) from flue gas emissions.
- **Animal feed:** Trona is used in animal feed, with the largest market being a rumen buffer for dairy cows. A proper feed program that includes trona actually increases milk production.

3. Is trona widely used?

- Trona has been used for decades in many industries.
- Trona is used for air pollution control throughout the country.
- Trona is used throughout North America in animal feed.

4. How does trona work in air pollution control?

What air pollutants does trona target?

- Trona is used in Dry Sorbent Injection systems (DSI) where it reacts with acid gases to form a safe, non-corrosive waste product that will not damage equipment.
- It removes acid gases by reacting with them to form neutral sodium salts.
- Field-testing has shown removal rates of SO_2 greater than 90%.
- It has routinely achieved HCl removal of over 99% when needed.

5. When was it determined that trona could be used for air pollution control?

- Solvay discovered trona's value as an air pollution control product about 25 years ago.
- One of the longest running air pollution control customers is based in Denver, Colorado, where trona has been used effectively by a public utility power station for control of SO_2 emissions since the mid-80s.

6. Is it approved by the EPA?

- The EPA or the appropriate State Regulatory Agencies have approved trona's use as an air pollution control product and the product is also mentioned in air pollution control regulations such as the final MATS regulations.

7. As it is a fine powder, can the use of trona to control air pollutants by itself CAUSE air pollution?

- When used correctly in DSI systems, trona does not result in further air pollution.
- It is an effective product with safe, non-corrosive byproducts.
- In some cases, the use of trona improves the PM discharges from a source because it appears to enhance the performance of the ESP (electrostatic precipitator – used for particulate



control). Each unit is unique so you must monitor the results at your location.

8. What is Dry Sorbent Injection (DSI)?

- Dry Sorbent Injection is a process where a dry powdered substance is blown into a chamber or duct containing acid gases. In the case of trona and sodium sorbents such as sodium bicarbonate, the acid gases react with the powder to form non-corrosive byproducts. The byproducts and any excess sorbent are removed from the air stream typically using an ESP or a bag filter. The clean air is then discharged into the atmosphere through the exhaust stack.

9. How else is trona used to combat air pollution besides DSI?

- Trona is also added in other processes to control pollutants. For example, in production of gold ore, trona is added to the roaster (U.S. Patent #6,270,555) to control sulfur dioxide emissions.
- Trona is added in cement kilns to control sulfur emissions.
- In some situations, trona can be added to the fuel.

10. Is trona a harmful mineral? Environmentally-friendly?

- Trona is a non-hazardous, non-flammable mineral.
- Trona has been used to clean acid gas air streams in power plants and industry for over 25 years.
- For specific information regarding the safety and environmental properties of trona visit our website at www.solvair.us

11. Where is the Solvay Chemicals trona mine in the U.S.?

- Solvay Chemicals' trona mine is located in Green River, Wyoming.
- The largest and most pure trona deposit in the world is in the Green River Basin of Wyoming.
- It is estimated that this deposit alone could produce as much as 47 billion tons of soda ash.

12. How can I order trona?

- Trona is shipped from our plant site in Green River, WY and through our terminal network at strategic sites throughout the country.
- Call 1-800-SOLVAYC (800-765-8292) to get in touch with a SOLVAir sales representative who can help you evaluate your needs.
- Call 1-800-SOLVAYC to place an order.

13. Who is Solvay?

- SOLVAY is an international chemical Group committed to sustainable development with a clear focus on innovation and operational excellence. Its recent acquisition of specialty chemicals company Rhodia created a much larger player, which is realizing over 90% of its sales in markets where it is among the top three global leaders. Solvay offers a broad range of products that contribute to improving the quality of life and the performance of its customers in markets such as consumer goods, construction, automotive, energy, water and environment, and electronics. The Group is headquartered in Brussels. Its companies employ more than 30,000 people in 55 countries and generated EUR 12.7 billion in net sales in 2011 (pro forma). Solvay SA (SOLB.BE) is listed on NYSE Euronext in Brussels and Paris (Bloomberg: SOLB.BB - Reuters: SOLBt.BR).



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