

Soda Ash

Characteristics: Soda ash, or anhydrous sodium carbonate, is a white powdered or granular alkaline material, produced in two grades that differ in granulation and in bulk density. It is capable of absorbing atmospheric moisture and carbon dioxide slowly to form sodium sesquicarbonate and various hydrates.

| | | |
|--------------------|---------------------------------------|--------------------------|
| Properties: | Formula | Na_2CO_3 |
| | Molecular | 105.99 |
| | Absolute Density g/cm^3 | 2.533 (at 25 degree C) |
| | Melting point, degree C | 851 |
| | Solubility | see graph in next pages |
| | pH of 1% solution at 25 degree C | 11.3 |
| | (Properties of pure sodium carbonate) | |

Typical Analysis:

| | Dense Soda Ash | Light Soda Ash |
|--|----------------|----------------|
| Sodium Carbonate (Na_2CO_3), % | 99.8 | 99.5 |
| Equivalent Sodium Oxide (Na_2O), % | 58.4 | 58.2 |
| Sodium Sulfate (Na_2SO_4), % | 0.02 | 0.02 |
| Sodium Chloride (NaCl), % | 0.01 | 0.01 |
| Drying loss, % | 0.10 | 0.12 |
| Iron (Fe)% | 2 | 8 |
| Bulk density, lbs/ft ³ | 63-66 | 35 |

Screen analysis (cum. % on):

| | | |
|-----------|----|----|
| US No. 30 | 3 | 3 |
| 100 | 90 | 18 |
| 200 | 99 | 65 |

Product Markets and Uses:

| | |
|---|--|
| Market - Aluminum manufacturers | Use - Supplies sodium ion and alkalinity required to dissolve bauxite |
| Market - Chemical manufacturers | Use - Raw material source of alkalinity and sodium ion. |
| Market - Cleanser compounders | Use - Basic material which supplies detergency. |
| Market - Foundries and Steel mills. | Use - Supplies sodium ion needed in desulfurization. |
| Market - Glass manufacturers. | Use - Used as a fluxing agent in a glass batch. |
| Market - Mines | Use - pH control in froth flotation |
| Market - Paper industry | Use - Supplies the sodium ion required in the pulping of wood fiber SO_2 removal. |
| Market - Soap Makers | Use - as a raw material to saponify fatty acids. |
| Market - Waste water treatment plants. | Use - Supplies alkalinity required in neutralization. |
| Market - Potable water treatment plants | Use - To supply the alkalinity and sodium ion need in water softening. |
| Market - Environmental Control | Use - Scrub acid gas from air discharge streams, pH control of water effluents. |