

# Salt (Sodium Chloride)

## Health & Safety Data Sheet

Product Name:      Salt

### Properties

The composition by weight is 39.4% sodium and 60.6% chlorine. Pure sodium chloride is a colourless crystalline solid.

- \* Melting point                      802°C
- \* Boiling point                        1413°C
- \* Density of crystalline solid at 20°C      2.165g/cc
- \* Vapour pressure 2.4mm Hg at 747°C
- \* Contains no water of crystallisation
- \* Absorbs moisture from damp atmospheres above 75% relative humidity.
- \* Does not react with alkalis at ordinary temperatures.
- \* Reacts with strong sulphuric acid or nitric acid to give hydrogen chloride gas.
- \* Under wet conditions, can corrode many common metals, particularly iron, aluminium and zinc. **Stainless steel** and **monel** resist attack.
- \* Salt has a preservative effect on timber.
- \* Salt can be treated with part per million levels on a non-toxic anti-caking additive.

**Pure Dried Vacuum, White Rock and Marine salt** contains about 99% sodium chloride.

### Health Hazards

Salt is an essential constituent of the diet. It provides important body electrolytes and is the source of hydrochloric acid present in the gastric juices. The blood stream contains nearly 1% Sodium Chloride. In **normal** industrial use salt is not hazardous.

**Skin**                      Dry salt and concentrated solutions can cause withdrawal of fluid from the skin and may, on prolonged contact produce irritation.

**Eyes**                     Salt and salt solutions are not toxic to the eye but concentrations much above that of tears cause a stinging sensation.

**Inhalation**            Very high concentration of salt dust may result in inflammation of the mucus membranes of the respiratory tract.

**Ingestion**            Acute and chronic toxic effects can result from the ingestion of excessive amounts of either salt or brine. Salt should not be used as an emetic to induce vomiting. High concentrations produce inflammatory reactions in the gastrointestinal tract and cause vomiting, diarrhoea, convulsions and collapse. Ingestion of hypertonic solutions can cause fatal disturbance of body electrolyte and fluid balance. Less than a table spoon of salt may severely

poison an infant and sometimes prove fatal.

**Toxicity Data** LD50 3000mg/kg oral, rat.

### **Safety Precautions**

- Avoid prolonged contact with the skin and inhalation of dust concentrations, otherwise normal good handling and house-keeping practice is adequate.
- \* No special protective clothing is required.
- \* An eyewash bottle with clean water should be available.
- \* Salt dust is non-flammable but static electricity can be generated by pneumatic conveying, therefore pipes should be bonded and earthed, especially in environments where a spark could prove hazardous.
- \* **Dry Salt** because of its hygroscopic nature, should be stored in a dry atmosphere and away from concentrated acids.
- \* **Coarse Graded Rock Salt and Marine Salt** can be stored in the open if desired, away from valued vegetation. A high concentration of salt can damage plant life.
- \* Spillages should be swept up or may be safely water hosed to drain subject to local regulations.

### **First Aid Treatment**

**Skin** Wash with plenty of water.

**Eyes** Irrigate with eyewash or water.

**Inhalation** Remove patient to fresh air. Keep warm and at rest. Give drinks if desired.

**Ingestion** Vomiting will probably occur. Providing the patient is conscious give plenty of liquid to drink. Obtain immediate medical attention especially if vomiting has not occurred.

### **Fire and Explosion Hazards**

- \* Non hazardous.
- \* Salt withstands temperatures up to its melting point and beyond without decomposing, but at very high temperatures (greater than approximately 800°C) a vapour is omitted which is particularly irritating to the eyes.

### **Waste Disposal**

Disposal should be in accordance with local state or national legislation.

1<sup>st</sup> October 2006