

# Material Safety Data Sheets

Revision 2

## 1. IDENTIFICATION

|                     |                                                                                                                                                                      |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name        | Sodium hydrogen carbonate                                                                                                                                            |
| Other Names         | Bicar; CARBONIC ACID, MONOSODIUM SALT; Sodium hydrogen carbonate; Sodium bicarbonate                                                                                 |
| Code No             |                                                                                                                                                                      |
| Uses                | Food/feed stuff additives, Detergent, Chemical industry, Glass industry, Foaming agents, Water treatment, Environmental protection, Purifying flue gas, Animal feed. |
| Chemical Family     | No Data Available                                                                                                                                                    |
| Chemical Formula    | NaHCO <sub>3</sub>                                                                                                                                                   |
| Chemical Name       | Sodium Bicarbonate                                                                                                                                                   |
| Product Description | No Data Available                                                                                                                                                    |
| Company             | Arman sina.co                                                                                                                                                        |
| Contact Information | <a href="mailto:info@armansina.com">info@armansina.com</a><br><a href="http://www.armansina.com">www.armansina.com</a>                                               |

## 2. HAZARD IDENTIFICATION

Hazard Classification NOT hazardous

Symbol

NOT hazardous

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Ingredients

| Chemical Entity    | Formula            | CAS Number | Proportion |
|--------------------|--------------------|------------|------------|
| Sodium Bicarbonate | NaHCO <sub>3</sub> | 144-55-8   | >=95.00 %  |

#### 4. FIRST AID MEASURES

##### Description of necessary measures according to routes of exposure

|                                           |                                                                                                                                                                          |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Swallowed                                 | Rinse mouth with water. Give water to drink. Do NOT induce vomiting. If symptoms persist, seek medical attention.                                                        |
| Eye                                       | Immediately flush eyes with plenty of water holding eyelids open, also under the eyelids. If irritation persists, seek medical attention.                                |
| Skin                                      | Remove contaminated clothing. Wash affected area with soap and plenty of water. If irritation persists, seek medical attention.                                          |
| Inhaled                                   | Remove victim from exposure to fresh air. If not breathing, apply artificial respiration. If breathing is difficult, give oxygen. If symptoms persist, call a physician. |
| Advice to Doctor                          | Treat symptomatically based on judgement of doctor and individual reactions of patient.                                                                                  |
| Medical Conditions Aggravated by Exposure | No information available on medical conditions which are aggravated from exposure to this product.                                                                       |

#### 5. FIRE FIGHTING MEASURES

|                                    |                                                                                                                                                                                                  |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Measures                   | Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk.      |
| Flammability Conditions            | Product is a non-flammable solid.                                                                                                                                                                |
| Extinguishing Media                | In case of fire, use appropriate extinguishing media most suitable for surrounding fire conditions.                                                                                              |
| Fire and Explosion Hazard          | Non-combustible solid                                                                                                                                                                            |
| Hazardous Products of Combustion   | None                                                                                                                                                                                             |
| Special Fire Fighting Instructions | Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.                                                                                  |
| Personal Protective Equipment      | Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves). |
| Flash Point                        | No Data Available                                                                                                                                                                                |
| Lower Explosion Limit              | No Data Available                                                                                                                                                                                |
| Upper Explosion Limit              | No Data Available                                                                                                                                                                                |
| Auto Ignition Temperature          | No Data Available                                                                                                                                                                                |
| Hazchem Code                       | No Data Available                                                                                                                                                                                |

#### 6. ACCIDENTAL RELEASE MEASURES

|                                      |                                                                                                                                                                                                                                                                     |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Response Procedure           | Avoid accidents, clean up immediately. Slippery when spilt. Eliminate all sources of ignition. Increase ventilation. Avoid generating dust. Stop leak if safe to do so. Isolate the danger area. Use clean, non-sparking tools and equipment. Avoid dust formation. |
| Clean Up Procedures                  | Contain and sweep/shovel up spills with dust binding material or use an industrial vacuum cleaner. Sweep up to prevent slipping hazard. Transfer to a suitable, labelled waste container and dispose of promptly.                                                   |
| Containment                          | Stop leak if safe to do so. Isolate the danger area.                                                                                                                                                                                                                |
| Decontamination                      | Avoid dust formation.                                                                                                                                                                                                                                               |
| Environmental Precautionary Measures | Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management. Prevent any mixture with an acid into the sewer/drain (gas formations).                               |
| Evacuation Criteria                  | Evacuate all unnecessary personnel.                                                                                                                                                                                                                                 |

#### 7. HANDLING AND STORAGE

|          |                                                                                                                                                                                                                                                                                                                                                   |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Handling | Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product dust/fumes. |
| Storage  | Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as                                                                                                                |

This product is not classified dangerous for transport according to The Australian Code for the Transport of Dangerous Goods By Road and Rail.

Container

Store in original packaging as approved by manufacturer. Packaging material: Paper + PE, Polyethylene, Polypropylene, Woven plastic material + PE.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General                       | <p>No exposure standard has been established for this product by the Australian Safety and Compensation Council (ASCC). However, the exposure standard for dust not otherwise specified is 10mg/m<sup>3</sup> (for inspirable dust) and 3mg/m<sup>3</sup> (for respirable dust).</p> <p>NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.</p> <p>These exposure standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.</p> |
| Exposure Limits               | No Data Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Biological Limits             | No information available on biological limit values for this product.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Engineering Measures          | A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Personal Protection Equipment | <p>RESPIRATOR: Respiratory protection that conforms to international/ national standards (AS1715/1716).</p> <p>EYES: Safety goggles (AS1336/1337).</p> <p>HANDS: Wear suitable gloves (AS2161).</p> <p>CLOTHING: Long-sleeved protective clothing and safety footwear (AS3765/2210).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Work Hygienic Practices       | Do not eat, drink or smoke while using this product. Wash hands before breaks and end of workday. Handle in accordance with good industrial hygiene and safety practice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                           |                                                   |
|---------------------------|---------------------------------------------------|
| Physical State            | Solid                                             |
| Appearance                | Crystalline Powder                                |
| Odour                     | Odourless                                         |
| Colour                    | White                                             |
| pH                        | 8.4 8.4 g/L                                       |
| Vapour Pressure           | No Data Available                                 |
| Relative Vapour Density   | No Data Available                                 |
| Boiling Point             | No Data Available                                 |
| Melting Point             | No Data Available                                 |
| Freezing Point            | No Data Available                                 |
| Solubility                | No Data Available                                 |
| Specific Gravity          | No Data Available                                 |
| Flash Point               | No Data Available                                 |
| Auto Ignition Temp        | No Data Available                                 |
| Evaporation Rate          | No Data Available                                 |
| Bulk Density              | 0.5-1.3 kg/dm <sup>3</sup>                        |
| Corrosion Rate            | No Data Available                                 |
| Decomposition Temperature | No Data Available                                 |
| Density                   | 2.21 Kg/dm <sup>3</sup> - 2.23 Kg/dm <sup>3</sup> |
| Specific Heat             | No Data Available                                 |
| Molecular Weight          | No Data Available                                 |
| Net Propellant Weight     | No Data Available                                 |
| Octanol Water Coefficient | No Data Available                                 |
| Particle Size             | No Data Available                                 |
| Partition Coefficient     | No Data Available                                 |

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Saturated Vapour Concentration | No Data Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Vapour Temperature             | No Data Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Viscosity                      | No Data Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Volatile Percent               | No Data Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| VOC Volume                     | No Data Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Additional Characteristics     | <p>Solubility(ies): 69 g/l (Water) Temperature: 0 Deg C ( 32 Deg F )<br/> 93 g/l (Water) Temperature: 20 DC ( 68 Deg F )<br/> 165 g/l (Water) Temperature: 60 DC ( 140 Deg F )<br/> Slightly soluble in Alcohol</p> <p>pKa1= 6.33<br/> Bulk density: from 0.5 - 1.3 kg/dm3<br/> from 31 - 75 lb/ft3</p> <p>Solubility(ies): 69 g/l (Water) Temperature: 0           32<br/> : 93 g/l (Water) Temperature: 20           68<br/> : 165 g/l (Water) Temperature: 60           140<br/> : Other<br/> : slightly soluble<br/> : Alcohol</p> <p>pH: 8.4 (Water<br/> Concentration: 8.4 g/l at 25 Deg C<br/> 8.6<br/> Concentration: 52 g/l at 25 Deg C</p> |

|                                                                |                   |
|----------------------------------------------------------------|-------------------|
| Potential for Dust Explosion                                   | No Data Available |
| Fast or Intensely Burning Characteristics                      | No Data Available |
| Flame Propagation or Burning Rate of Solid Materials           | No Data Available |
| Non-Flammables That Could Contribute Unusual Hazards to a Fire | No Data Available |
| Properties That May Initiate or Contribute to Fire Intensity   | No Data Available |
| Reactions That Release Gases or Vapours                        | No Data Available |
| Release of Invisible Flammable Vapours and Gases               | No Data Available |

## 10. STABILITY AND REACTIVITY

|                                  |                                                                                          |
|----------------------------------|------------------------------------------------------------------------------------------|
| Chemical Stability               | Stable under recommended storage conditions. Keep at temperature not exceeding 50 Deg C. |
| Conditions to Avoid              | Exposure to moisture, do not overheat to avoid thermal decomposition.                    |
| Materials to Avoid               | Incompatible with acids.                                                                 |
| Hazardous Decomposition Products | None                                                                                     |
| Hazardous Polymerisation         | No Data Available                                                                        |

## 11. TOXICOLOGICAL INFORMATION

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Information | <p>Acute Oral toxicity LD50 Rat : &gt; 4000mg/Kg.<br/> Acute Inhalation toxicity LC50 Rat : &gt; 4.74mg/L<br/> No skin Irritation in Rabbits<br/> No eye irritation in Rabbits<br/> Genetic Toxicity In Vitro: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.<br/> Oral route (gavage), 10 days, rabbit, 330mg/Kg, Did not show teratogenic effects in animal experiments.<br/> testing on rats did not show any carcinogenic effects.</p> |
| Eyelrritant         | Dust contact with the eyes can lead to mechanical irritation.                                                                                                                                                                                                                                                                                                                                                                                                             |
| Ingestion           | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.                                                                                                                                                                                                                                                                                                                                                                                          |
| Inhalation          | In case of higher concentration: slight irritation.                                                                                                                                                                                                                                                                                                                                                                                                                       |
| SkinIrritant        | Repeated or prolonged exposure: Contact with dust can cause mechanical irritation or drying of the skin.                                                                                                                                                                                                                                                                                                                                                                  |
| Carcinogen Category | No Data Available                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## 12. ECOLOGICAL INFORMATION

|                           |                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ecotoxicity               | <b>Acute Toxicity</b><br>Fishes, <i>Oncorhynchus mykiss</i> , LC50: 7700 mg/L/96 h<br>Fishes, <i>Oncorhynchus mykiss</i> , NOEC: 2300 mg/L/96 h<br>Fishes, <i>Lepomis macrochirus</i> , LC50: 7100 mg/L/96 h<br>Fishes, <i>Lepomis macrochirus</i> , NOEC: 5200 mg/L/96 h<br>Crustaceans, <i>Daphnia magna</i> , EC50: 4100 mg/L/48 h<br>Crustaceans, <i>Daphnia magna</i> , NOEC: 3100 mg/L/48 h |
|                           | <b>Chronic Toxicity</b><br>Crustaceans, <i>Daphnia magna</i> , NOEC: > 576 mg/L/21 d                                                                                                                                                                                                                                                                                                              |
| Persistence/Degradability | <b>Abiotic degradation:</b> Water, hydrolyses<br><b>Result:</b> acid/base equilibrium as a function of pH.<br><b>Degradation Products:</b> Carbonic acid/bicarbonate/carbonate<br><b>Biodegradation</b><br><b>Remarks:</b> The methods for determining the biological degradability are not applicable to inorganic substances.                                                                   |
| Mobility                  | High mobility in water and soil/sediments.                                                                                                                                                                                                                                                                                                                                                        |
| Environmental Fate        | Avoid contaminating waterways, drains and sewers.                                                                                                                                                                                                                                                                                                                                                 |
| Bioaccumulation Potential | Does not bioaccumulate                                                                                                                                                                                                                                                                                                                                                                            |
| Environmental Impact      | No Data Available                                                                                                                                                                                                                                                                                                                                                                                 |

## 13. DISPOSAL CONSIDERATIONS

|                                   |                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General Information               | Dispose of in accordance with all local regulations. All empty packaging should be disposed of in accordance with Local Regulations or recycled/reconditioned at an approved facility.                                                                                                                                                                               |
| Special Precautions for Land Fill | Contact a specialist disposal company or the local waste regulator for advice. Where possible recycling is preferred to disposal or incineration. Clean container with water. Dispose of rinse water in accordance with local and national regulations. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities |

## 14. TRANSPORT INFORMATION

### Land Transport

|                      |                    |
|----------------------|--------------------|
| Proper Shipping Name | SODIUM BICARBONATE |
| Class                | No Data Available  |
| Subsidiary Risk(s)   | No Data Available  |
| UN Number            | No Data Available  |
| Hazchem              | No Data Available  |
| Pack Group           | No Data Available  |
| Special Provision    | No Data Available  |

### Sea Transport IMDG

|                      |                    |
|----------------------|--------------------|
| Proper Shipping Name | SODIUM BICARBONATE |
| Class                | No Data Available  |
| Subsidiary Risk(s)   | No Data Available  |
| UN Number            | No Data Available  |
| Hazchem              | No Data Available  |
| Pack Group           | No Data Available  |
| Special Provision    | No Data Available  |
| EMS                  | No Data Available  |
| Marine Pollutant     | No                 |

## Air Transport IATA

|                      |                                                           |
|----------------------|-----------------------------------------------------------|
| Proper Shipping Name | SODIUM BICARBONATE (Not restricted according to IATA DGR) |
| Class                | No Data Available                                         |
| Subsidiary Risk(s)   | No Data Available                                         |
| UN Number            | No Data Available                                         |
| Hazchem              | No Data Available                                         |
| Pack Group           | No Data Available                                         |
| Special Provision    | No Data Available                                         |
| Comments             | Not restricted according to IATA DGR                      |

## 15. OTHER INFORMATION

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Revision   | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Key/Legend | <p>&lt; Less Than</p> <p>&gt; Greater Than</p> <p>atm Atmosphere</p> <p>CAS Chemical Abstracts Service (Registry Number)</p> <p>cm Square Centimetres</p> <p>CO<sub>2</sub> Carbon Dioxide</p> <p>COD Chemical Oxygen Demand</p> <p>Degrees Celsius</p> <p>EPA (New Zealand) Environmental Protection Authority of New Zealand</p> <p>Degrees Fahrenheit</p> <p>g Grams</p> <p>g/cm Grams per Cubic Centimetre</p> <p>g/l Grams per Litre</p> <p>HSNO Hazardous Substance and New Organism</p> <p>IDLH Immediately Dangerous to Life and Health</p> <p>immiscible Liquids are insoluble in each other.</p> <p>inHg Inch of Mercury</p> <p>inH<sub>2</sub>O Inch of Water</p> <p>K Kelvin</p> <p>kg Kilogram</p> <p>kg/m Kilograms per Cubic Metre</p> <p>lb Pound</p> <p>LC<sub>50</sub> LC stands for lethal concentration. LC<sub>50</sub> is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.</p> <p>LD<sub>50</sub> LD stands for Lethal Dose. LD<sub>50</sub> is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.</p> <p>ltr or L Litre</p> <p>m Cubic Metre</p> <p>mbar Millibar</p> <p>mg Milligram</p> <p>mg/24h Milligrams per 24 Hours</p> <p>mg/kg Milligrams per Kilogram</p> <p>mg/m Milligrams per Cubic Metre</p> <p>Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.</p> <p>mm Millimetre</p> <p>mmH<sub>2</sub>O Millimetres of Water</p> <p>mPa.s Millipascals per Second</p> <p>N/A Not Applicable</p> <p>NIOSH National Institute for Occupational Safety and Health</p> <p>NOHSC National Occupational Health and Safety Commission</p> <p>OECD Organisation for Economic Co-operation and Development</p> <p>Oz Ounce</p> <p>Pa Pascal</p> <p>ppb Parts per Billion</p> <p>ppm Parts per Million</p> <p>ppm/2h Parts per Million per 2 Hours</p> <p>ppm/6h Parts per Million per 6 Hours</p> |

psi Pounds per Square Inch  
R Rankine  
RCP Reciprocal Calculation Procedure  
STEL Short Term Exposure Limit  
TLV Threshold Limit Value  
tne Tonne  
TWA Time Weighted Average  
ug/24H Micrograms per 24 Hours  
UN United Nations  
wt Weight