CHAINARIS PHUKET ENGINEERING CO., LTD D

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

1.1 Product Name	: SMB
1.2 Type of Product	: For removal of free chlorine.
1.3 Chemical Name	: Sodium metabisulfite
1.4 CAS	: 7681-57-4
1.5 Head Office	: Chainaris Phuket Engineering Co;Ltd.
	63/13 Moo 2 T.Vichit , A. Muang Phuket 83000
	Tel : 0 7651 3100 Fax : 0 761 3105
	Web site : www.chainaris.co.th

2. Composition / Information on Ingredient

Sodium metabisulfite 100 % by Weight.

3. Hazards Indentification

3.1 Potential Acute Health Effects :

Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator), of eye contact (irritant)

3.2 Potential Chronic Health Effects :

Slightly hazardous in case of skin contact (sensitizer), of ingestion, of inhalation (lung irritant).

Teratogenic Effect **:** Not available.

Developmental Toxicity: Not available. The substance may be toxic to upper respiratory tract, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage.

4. First Aid Procedure

Eye Contact :	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15minutes. Cold water may be used. Get medical attention immediately.
Skin Contact :	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Removecontaminatedclothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation :	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion :	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

5. Fire-Fighing Measure

Flammability of the Product :	Non-flammable.
Auto-Ignition Temperature :	Not applicable.
Flash Points :	Not applicable.
Flammable Limits :	Not applicable.
Products of Combustion :	Not available.
Fire Hazards in Presence of Various Substances :	Not applicable.

Explosion Hazards in Presence of Various Substances :

Risks of explosion of the product in presence of mechanical impact :	Not available.
Risks of explosion of the product in presence of static discharge :	Not available.
Fire Fighting Media and Instructions :	Not applicable.

Special Remarks on Fire Hazards :	When heated to decomposition it emits toxic fumes of SOx, Na2O. Decomposes on heating to form sodium sulfate.
Special Remarks on Explosion Hazards :	Not available.

6. Accident Release Measure

Small Spill :	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill :	Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

7.Storage And Handing

Precautions :	Keep locked up.. Do not ingest. Do not breathe dust. Avoid contact with skin. Wear suitable protective clothing.

	In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids.
Storage :	Keep container tightly closed. Keep container in a cool, well-ventilated area. Moisture sensitive. Air Sensitive.

8. Exposure Controls /Protection

Engineering Controls :	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection :	Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Personal
Protection in Case of a Large Spill :	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

9. Physical And Chemical Properties

Physical state and appearance :	Solid. (Crystals solid or Powdered solid.)
Odor :	odor of sulfur dioxide.
Taste :	Not available.
Molecular Weight :	190.13 g/mole
Color :	White to yellowish.
pH (1% soln/water) :	4.3 [Acidic.]
Boiling Point :	Not available.
Melting Point :	Decomposition temperature: 150°C (302°F)
Critical Temperature :	Not available.
Specific Gravity :	1.4 (Water = 1)
Vapor Pressure :	Not applicable.
Vapor Density :	Not available.
Volatility :	Not available.
Odor Threshold :	Not available.
Water/Oil Dist. Coeff. :	Not available.
Ionicity (in Water) :	Not available.
Dispersion Properties :	See solubility in water.

Solubility **:**	Easily soluble in cold water, hot water. Freely soluble in glycerol. Slightly soluble in alcohol. Moderately soluble in ethanol**.**

10. Stability And Reativity

Stability :	The product is stable.
Instability Temperature :	Not available.
Conditions of Instability :	Incompatible materials, heat, moisture, air, dust generation.
Incompatibility with various substances :	Reactive with oxidizing agents, acids.
Corrosivity :	Non-corrosive in presence of glass.
Special Remarks on Reactivity :	Moisture sensitive Air sensitive. It slowly oxidizes to sodium sulfate upon exposure to air and moisture. Incompatible with sodium nitrite.
Special Remarks on Corrosivity :	Not available.
Polymerization :	Will not occur.

11. Toxicological & Heath Hazard Data

Routes of Entry :	Inhalation. Ingestion.
Toxicity to Animals :	Acute oral toxicity (LD50): 1131 mg/kg [Rat]. Acute dermal toxicity (LD50): >1000 mg/kg [Guinea pig].
Chronic Effects on Humans :	CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. May cause damage to the following organs: upper respiratory tract, skin, eyes.
Other Toxic Effects on Humans :	Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).
Special Remarks on Toxicity to Animals :	Not available.

Special Remarks on Chronic Effects on Humans:

May affect genetic material (mutagenic) based on animal test data. May cause adverse reproductive effects based on animaltest data.

12. Ecological Information

Ecotoxicity :	Not available.
BOD5 and COD :	Not available.
Products of Biodegradation :	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation :	The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation :	Not available.

13.Desposal Considerations

Waste Disposal :	Waste must be disposed of in accordance with federal, state and local environmental control regulations.