JONES-HAMILTON CO.
8400 Enterprise Drive, Newark, CA 94560-0464  (510) 797-2471

MATERIAL SAFETY DATA SHEET

MANUFACTURER'S NAME/ADDRESS: 
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NEWARK, CA 94560
OR
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(510) 792-4500
OR
(419) 666-9838
(419) 666-6337

CHEMTREC: (800) 424-9300

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: SODIUM BISULFATE, ANHYDROUS GLOBULAR, TECHNICAL
CHEMICAL FORMULA: NaHSO₄
CAS NUMBER: 7681-38-1
NIOSH REGISTRY NO.: UNKNOWN
GENERAL OR GENERIC ID: SODIUM ACID SULFATE, NITRE CAKE, SODIUM HYDROGEN SULFATE
HAZARD CLASSIFICATION (DOT): NOT CLASSIFIED AS HAZARDOUS
UN NO.: 1821
OSHA HAZARD COMMUNICATIONS HEALTH HAZARD CLASSIFICATION: IRRITANT
SECTION 312 OF SARA TITLE III HAZARD CATEGORY: IMMEDIATE
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS) RATING: 1-0-1-F
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATING: 1-0-1

SECTION II - HAZARDOUS COMPONENTS

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>PERCENT BY WEIGHT</th>
<th>PEL</th>
<th>TLV</th>
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<tr>
<td>SODIUM BISULFATE</td>
<td>93.2</td>
<td>NONE</td>
<td>NONE</td>
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<tr>
<td>SODIUM SULFATE</td>
<td>6.5</td>
<td>ESTABLISHED</td>
<td>ESTABLISHED</td>
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</table>

SECTION III - PHYSICAL DATA

PROPERTY                              VALUE
MELTING POINT                        350°F
BULK DENSITY                        83 LB/CU.FT.
SOLUBILITY                          100%
PERCENT VOLATILE                    NON-VOLATILE

DESCRIPTION: OFF-WHITE, BEAD-LIKE, GRANULAR DRY MATERIAL.
SECTION IV – FIRE AND EXPLOSION DATA

FLASH POINT: NOT APPLICABLE, WILL NOT BURN.

EXPLOSIVE LIMITS: UPPER: NOT APPLICABLE LOWER: NOT APPLICABLE

EXTINGUISHING MEDIA: WATER OR DRY CHEMICAL AS APPROPRIATE FOR
COMBUSTIBLES IN AREA. AVOID WATER CONTACT TO MATERIAL IF POSSIBLE.

HAZARDOUS THERMAL DECOMPOSITION PRODUCTS: AT TEMPERATURES OVER 570°F,
PRODUCT WILL DECOMPOSE, GENERATING OXIDES OF SULFUR.

UNUSUAL FIRE AND EXPLOSION HAZARDS: PRODUCT READILY DISSOLVES IN
WATER TO FORM A WEAK SULFURIC ACID SOLUTION. NO GASES OR TOXIC FUMES
ARE Emitted FROM THIS REACTION, BUT PRECAUTIONS FOR EXPOSURE TO
SULFURIC ACID SHOULD BE FOLLOWED.

SPECIAL FIRE FIGHTING PROCEDURES: IF WATER IS USED TO EXTINGUISH
COMBUSTIBLES AND PRODUCT IS DISSOLVED IN WATER FORMING SULFURIC ACID,
WEAR ACID PROTECTIVE EQUIPMENT. IF ELEVATED TEMPERATURES (> 570°F)
ARE REACHED, SELF-CONTAINED BREATHING APPARATUS SHOULD BE WORN.

SECTION V – HEALTH HAZARD AREA

PRINCIPAL HEALTH HAZARDS, INCLUDING SIGNIFICANT ROUTES, EFFECTS, AND
SYMPTOMS OF OVEREXPOSURE AND MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
MAY BE:

EYE: MILD TO SEVERE IRRITANT. MAY CAUSE BURNS IF NOT FLUSHED WITH
WATER.

SKIN: MODERATE IRRITANT. MAY CAUSE BURNS IF NOT FLUSHED WITH WATER.

INHALATION: IRRITANT. MAY IRRITATE OR BURN NOSE, THROAT AND LUNGS.
NO EXPOSURE LIMITS ESTABLISHED.

INGESTION: IRRITANT. MAY IRRITATE OR BURN MOUTH, ESOPHAGUS OR
STOMACH. ANIMAL TEST DATA: LD₅₀ RAT 2800 MG/KG.

CARCINOGENICITY: NOT LISTED AS CARCINOGEN BY NTP, IARC OR OSHA.

FIRST AID:
IN EYES: IMMEDIATELY FLUSH WITH WATER FOR 15 MINUTES, LIFTING EYELIDS
TO THOROUGHLY FLUSH. GET PROMPT MEDICAL ATTENTION.

ON SKIN: IMMEDIATELY FLUSH WITH WATER FOR 15 MINUTES. IF BURN
OCCURS, OBTAIN MEDICAL HELP.

IF INHALED: MOVE TO FRESH AIR LOCATION. IF IRRITATION OR DISCOMFORT
PERSISTS, SEEK MEDICAL ATTENTION.

IF SWALLOWED: DRINK LARGE QUANTITIES OF MILK OR WATER. FOLLOW WITH
MILK OF MAGNESIA, BEATEN EGGS OR VEGETABLE OIL. DO NOT INDUCE
VOMITING. CONTACT PHYSICIAN IMMEDIATELY.
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NOTES TO PHYSICIAN:
EYES: NATURAL WATERING OF EYES WILL DISSOLVE SODIUM BISULFATE, FORMING A WEAK SULFURIC ACID SOLUTION WHICH MAY CAUSE BURNS. FLUSH AFFECTED AREA THOROUGHLY WITH WATER. DO NOT USE CHEMICAL ANTIDOTES OR NEUTRALIZING SOLUTIONS.

SKIN: MILD BURNS MAY OCCUR IF NOT THOROUGHLY FLUSHED PREVIOUSLY.

INHALATION: MILD BURNING SENSATIONS MAY OCCUR TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.

INGESTION: BODY WATER CONTENT WILL REACT WITH SODIUM BISULFATE TO FORM A WEAK SULFURIC ACID SOLUTION, WHICH MAY BURN TISSUES IN MOUTH, ESOPHAGUS OR STOMACH. SOLUTION SHOULD BE DILUTED TO REDUCE BURNING EFFECT.

SECTION VI - REACTIVITY DATA

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH STRONG ALKALINE MATERIALS SUCH AS CAUSTIC. REACTS WITH WATER TO FORM WEAK SULFURIC ACID SOLUTION. DO NOT MIX WITH LIQUID CHLORINE BLEACH, AMMONIA CLEANSERS OR SIMILAR PRODUCTS.

CONDITIONS TO AVOID: STORE IN DRY AREA TO AVOID MOISTURE CONTACT.

HAZARDOUS DECOMPOSITION: NONE, UNLESS HEATED OVER 570°F, AT WHICH SULFUR DIOXIDE AND SULFUR TRIOXIDE ARE FORMED.

SECTION VII - SPILL OR LEAK PROCEDURES

SMALL SPILLS: MATERIAL IS A GRANULAR PRODUCT AND CAN BE SWEEP UP FROM SURFACES.

LARGE SPILL: PICK UP AS MUCH MATERIAL AS POSSIBLE WITH SHOVEL OR OTHER TOOL. NEUTRALIZE BALANCE OF SPILL WITH WEAK ALKALINE SOLUTION AND WASH DOWN TO SEWER IF FEDERAL, STATE OR LOCAL REGULATIONS PERMIT.

WASTE DISPOSAL METHODS: COMPLY WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION VIII - PROTECTIVE EQUIPMENT TO BE USED

VENTILATION: LOCAL VENTILATION TO A DUST COLLECTOR IS RECOMMENDED.

RESPIRATORY PROTECTION: NIOSH OR MSA CERTIFIED DUST MASK SHOULD BE WORN WHILE HANDLING PRODUCT TO CONTROL EXPOSURE BELOW NUISANCE DUST LIMITS OF 10 MG/M³.

PROTECTIVE GLOVES: WEAR ACID RESISTANT GLOVES SUCH AS RUBBER OR NEOPRENE.
SECTION VIII - PROTECTIVE EQUIPMENT TO BE USED (CONT.)

EYE PROTECTION: SAFETY GLASSES OR GOGGLES.

OTHER PROTECTIVE EQUIPMENT: CLOTHES SHOULD COMPLETELY COVER SKIN TO AVOID SKIN CONTACT. COATS, COVERALLS OR APRONS ARE RECOMMENDED.

SECTION IX - SPECIAL PRECAUTIONS

AVOID CONTACT WITH SKIN, EYES OR CLOTHING.

DO NOT STORE WHERE EXPOSED TO MOIST CONDITIONS OR NEAR STRONG ALKALIES.

KEEP CONTAINERS Tightly CLOSED.

WEAR ALL RECOMMENDED PROTECTIVE EQUIPMENT WHEN HANDLING.

THE DATA IN THIS MATERIAL SAFETY DATA SHEET RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED HEREIN AND DOES NOT RELATE TO USE IN COMBINATION WITH ANY OTHER MATERIAL IN ANY PROCESS. THE INFORMATION SET FORTH HEREIN IS FURNISHED FREE OF CHARGE AND IS BASED ON TECHNICAL DATA THAT JONES-HAMILTON CO. BELIEVES TO BE RELIABLE. IT IS INTENDED FOR USE BY PERSONS HAVING TECHNICAL SKILL AND AT THEIR OWN DISCRETION AND RISK. SINCE CONDITIONS OF USE ARE OUTSIDE OUR CONTROL, WE MAKE NO WARRANTIES, EXPRESS OR IMPLIED, AND ASSUME NO LIABILITY IN CONNECTION WITH ANY USE OF THIS INFORMATION. NOTHING HEREIN IS TO BE TAKEN AS A LICENSE TO OPERATE UNDER OR A RECOMMENDATION TO INFRINGE ANY PATENTS.

DATE OF LATEST REVISION: FEBRUARY 4, 1993

SIGNATURE/TITLE OF PREPARER: [Signature]

COLBY LA PLACE
CORPORATE MANUFACTURING MANAGER