SECTION 1. --- --- --- --- --- CHEMICAL IDENTIFICATION --- --- --- --- ---

PRODUCT #: 59087
NAME: SAND, WHITE QUARTZ

SECTION 2. --- --- --- --- --- COMPOSITION/INFORMATION ON INGREDIENTS --- --- --- --- ---

CAS #: 14808-60-7
SYNONYMS:
AGATE * AMETHYST * CELITE * CHALCEDONY * CHESTS * DIAMOND * DIAMOND * FLINT * FLINTS * HARDENED GOLD BOND B * INSUL * MINUS-SILICATE * NOVACULITE * ONYX * ALPHA-QUARTZ * OPALESCENT QUARTZ (ITALIAN) * SNOWITE * ROSE QUARTZ * SAND * SILICATE * SILICA, CRYSTALLINE QUARTZ (OSHA) * SILICA FLUORIDE (PRESSED CRYSTALLINE SILICA) * SILICA QUARTZ (ASTM) * SILICIA ANHYDRIDE * SILICON OXIDE, DI- (SAND) * SILVER BOND B *

SECTION 3. --- --- --- --- --- HAZARDS IDENTIFICATION --- --- --- --- ---

LABEL: PRECAUTIONARY STATEMENTS
HARMFUL
HARMFUL BY INHALATION
CRYSSTALLINE SILICA IS ANTICIPATED TO BE CARCINOGENIC
DO NOT BREATH DUST.

SECTION 4. --- --- --- --- --- FIRST-AID MEASURES --- --- --- --- ---

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH PROFUSE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES.
FLUSH SKIN WITH WAT.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS CALL A PHYSICIAN.

SECTION 5. --- --- --- --- --- FIRE FIGHTING MEASURES --- --- --- --- ---

EXTINGUISHING MEDIA
NONCOMBUSTIBLE.
USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.
SPECIAL FIREFIGHTING PROCEDURES
FOR FIRES INVOLVING THIS MATERIAL, DO NOT ENTER ANY ENCLODED OR CONFINSED FIRE SPACE WITHOUT PROPER PROTECTIVE EQUIMENT. THIS MAY INCLUDE SELF-CONTAINED BREATHING APPARATUS TO PROTECT AGAINST THE HAZARDOUS EFFECTS OF THE NORMAL PRODUCTS OF COMBUSTION OR OXYGEN.

CONTINUED ON NEXT PAGE
PRODUCT #: 59387
NAME: SAND, WHITE QUARTZ

SECTION 6. ----------------------------------------- ACCIDENTAL RELEASE MEASURES -----------------------------------------
WEAR PROTECTIVE EQUIPMENT.
Sweep up. Place in a bag and hold for waste disposal.
Ventilate area and wash spill site after material pickup is complete.

SECTION 7. ----------------------------------------- HANDLING AND STORAGE -----------------------------------------
Refer to Section 8.

SECTION 8. ----------------------------------------- EXPOSURE CONTROLS/PERSONAL PROTECTION -----------------------------------------
NIOSH/MSHA-APPROVED RESPIRATOR IN NONVENTILATED AREAS AND/OR FOR EXPOSURE ABOVE THE ACGIH TLV.
Chemical safety goggles.
Mechanical exhaust required.
Do not breathe dust.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.
Harmful dust.
Keep tightly closed.

SECTION 9. ----------------------------------------- PHYSICAL AND CHEMICAL PROPERTIES -----------------------------------------
Appearance and odor:
White to off-white granules.

SECTION 10. ----------------------------------------- STABILITY AND REACTIVITY -----------------------------------------

INCOMPATIBILITIES
Hydrogen fluoride
Hazardous combustion or decomposition products
Nature of decomposition products not known.

SECTION 11. ----------------------------------------- TOXICOLOGICAL INFORMATION -----------------------------------------

ACUTE EFFECTS

CONTINUED ON NEXT PAGE
PRODUCT #: 59887  NAME: SAND, WHITE QUARTZ

HARMFUL IF INHALED.
MAY BE HARMFUL IF SWALLOWED.
MAY CAUSE EYE IRRITATION.
MAY CAUSE SKIN IRRITATION.
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

CHRONIC EFFECTS
THIS COMPOUND IS LISTED AS A CARCINOGEN OR POTENTIAL CARCINOGEN
BY:
IARC MONOGRAPHS
NATIONAL TOXICOLOGY PROGRAM
RTCS NO: VV7330000
SILICA, CRYSTALLINE - QUARTZ

TOXICITY DATA
IHL-HMN LCLO3300 UG/M3/LOY-I

TARGET ORGAN DATA
LUNGS, THORAX OR RESPIRATION (FIBROSIS, FOCAL)
LUNGS, THORAX OR RESPIRATION (TUMORS)
LUNGS, THORAX OR RESPIRATION (BRONCHIOGENIC CARCINOMA)
GASTROINTESTINAL (TUMORS)
LIVER (OTHER CHANGES)
BLOOD (LYMPHOMA INCLUDING HODGKIN'S DISEASE)
TUMORIGINIC (CARCINOGENIC BY RTCS CRITERIA)
TUMORIGINIC (NEOPLASTIC BY RTCS CRITERIA)
TUMORIGINIC (EQUIVOCAL TUMORIGINIC AGENT BY RTCS CRITERIA)
TUMORIGINIC (TUMORS AT SITE OF APPLICATION)
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES
(CTCS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN CTCS FOR
COMPLETE INFORMATION.

SECTION 12. - - - - - - - ECOLOGICAL INFORMATION - - - - - - - -
DATA NOT YET AVAILABLE.

SECTION 13. - - - - - - - DISPOSAL CONSIDERATIONS - - - - - - - -
BURY IN A LANDFILL SITE APPROVED FOR THE DISPOSAL OF CHEMICAL
AND HAZARDOUS WASTES. OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. - - - - - - - TRANSPORT INFORMATION - - - - - - - -
CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

CONTINUED ON NEXT PAGE
MATERIAL SAFETY DATA SHEET

PRODUCT #: 59887
NAME: SAND, WHITE QUARTZ

CUST#: 2-097-94816
PO#: UND-41251

SECTION 15. - - - - - - - - - REGULATORY INFORMATION - - - - - - - - -

REVIEW STANDARDS, AND REGULATIONS
ACGIH TLV-TWA 0.1 mg/m³, RESPIRABLE DUST 851098 5,523, 86
IARC CANCER REVIEW: ANIMAL, SUFFICIENT EVIDENCE 1002755 43, 39, 97
IARC CANCER REVIEW: HUMAN, LIMITED EVIDENCE 1002755 43, 39, 97
IARC CANCER REVIEW: GROUP 2B 1002755 86
MSHA STANDARD-RESPIRABLE DUST IN AIR: TWA 10 mg/m³/2 RESP, 591021
DTLW* 3, 33, 73
OSHA PEL: THA 10 mg/m³ (QUARTZ)/M3, RESPIRABLE DUST
OSHA PEL: SAND 10 mg/m³ (QUARTZ)/M3, RESPIRABLE DUST
OSHA PEL: FINAL: THA 10 mg/m³ (QUARTZ)/M3, RESPIRABLE DUST
OSHA PEL: FINAL: SAND 10 mg/m³ (QUARTZ)/M3, RESPIRABLE DUST
OSHA PEL: FINALE: THA 10 mg/m³ (QUARTZ)/M3, RESPIRABLE DUST
OSHA PEL: FINALE: SAND 10 mg/m³ (QUARTZ)/M3, RESPIRABLE DUST
BELGIUM: THA 0.1 mg/m³ JANUARY 1993
BELGIUM: SAND 0.1 mg/m³ JANUARY 1993
DENMARK: THA 0.1 mg/m³ JANUARY 1993
DENMARK: SAND 0.1 mg/m³ JANUARY 1993
FINLAND: SAND 0.2 mg/m³ JANUARY 1993
GREAT BRITAIN: SAND 0.1 mg/m³ JANUARY 1993
DENMARK: SAND 0.16 mg/m³ JANUARY 1993
RUSSIA: SAND 0.16 mg/m³ JANUARY 1993
SANDWICH: SAND 0.1 mg/m³ JANUARY 1993
SWEDEN: SAND 0.1 mg/m³ JANUARY 1993
SWITZERLAND: SAND 0.15 mg/m³ JANUARY 1993
THAILAND: SAND 0.1 mg/m³ JANUARY 1993 (RESPIRABLE DUST)
THAILAND: SAND 0.1 mg/m³ JANUARY 1993 (TOTAL DUST)
UNITED KINGDOM: SAND 0.15 mg/m³ JANUARY 1993 (RESPIRABLE DUST)
UNITED KINGDOM: SAND 0.1 mg/m³ JANUARY 1993 (TOTAL DUST)
VENEZUELA: SAND 0.1 mg/m³ JANUARY 1993 (TOTAL DUST)
VIETNAM: SAND 0.15 mg/m³ JANUARY 1993
VIETNAM: CHECK ACGIH TLV
MIOSH REL TO SILICA, CRYSTALLINE QUARTZ-AIR: 10 mg/m³ TWA 0.05 mg/m³
NIOSH 100 REL TO SILICA, CRYSTALLINE QUARTZ-AIR: 10 mg/m³ TWA 0.05 mg/m³
NIOSH 1974: H2O 646451, TSH 591, TNE 4077, TSN 82, TNE 81221
NIOSH 1983: H2O 646782, TSH 135, TSN 10, TNE 8927, TFE 741
EPA TSCA CHEMICAL INVENTORY: JUNE 1990
EPA TSCA SECTION 8(c) STATUS REPORT: 9/15/89
EPA TSCA SECTION 8(c) STATUS REPORT: 9/15/89
EPA TSCA TEST SUBMISSION: (TSCATS) DATA BASE: JANUARY 1993
MIOSH CURRENT INTELLIGENCE BULLETIN 36, 1981
MIOSH ANALYTICAL METHODS: SEE SILICA, CRYSTALLINE (XRD), 7500: (COLOR), 7601: (IR), 7602
NTI 7TH ANNUAL REPORT ON CARCINOGENS, 1992 : ANTICIPATED TO BE
OSHA ANALYTICAL METHOD #10-142
OSHA ANALYTICAL METHOD #10-125G

CONTINUED ON NEXT PAGE
SECTION 16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.