



MATERIAL SAFETY DATA SHEET

97367 (4-85)

MSDS NUMBER 840,076-1

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24 HOUR EMERGENCY ASSISTANCE			GENERAL MSDS ASSISTANCE		
SHELL: 713-473-9461 CHEMTREC: 800-424-9300			SHELL: 713-241-4819		
ACUTE HEALTH +	FIRE 1	REACTIVITY 0	HAZARD RATING ▶ LEAST - 0 SLIGHT - 1 MODERATE - 2 HIGH - 3 EXTREME - 4		
*For acute and chronic health effects refer to the discussion in Section III					



SECTION I		NAME	
PRODUCT	ASBESTOS		
CHEMICAL NAME	AMOSITE, CHRYSOTILE, CROCIDOLITE AND OTHER FORMS COVERED BY THE OSHA HEALTH STANDARD		
CHEMICAL FAMILY	FIBROUS MINERAL SILICATES		
SHELL CODE	WWW		



SECTION II-A		PRODUCT/INGREDIENT	
NO.	COMPOSITION	CAS NUMBER	PERCENT
P	ASBESTOS	1332-21-4	100

SECTION II-B		ACUTE TOXICITY DATA	
NO.	ACUTE ORAL LD50	ACUTE DERMAL LD50	ACUTE INHALATION LC50
P	NONE		

SECTION III HEALTH INFORMATION

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

EYE CONTACT

DUST MAY CAUSE MECHANICAL IRRITATION TO THE EYES.

SKIN CONTACT

HIGH CONCENTRATIONS OF DUST ARE IRRITATING TO THE SKIN AND MAY CAUSE "ASBESTOS CORNS," BENIGN, WART-LIKE GROWTHS.

INHALATION

INHALATION OF ASBESTOS FIBER MAY CAUSE ASBESTOSIS (FIBROSIS OF THE LUNGS), LUNG CANCER OR MESOTHELIOMA (SEE OTHER HEALTH EFFECTS).

INGESTION

ASBESTOS HAS A LOW LEVEL OF ACUTE TOXICITY UPON INGESTION.

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SIGNS AND SYMPTOMS

IRRITATION AS NOTED ABOVE. LUNG DAMAGE (SCARRING, AND TUMORS) MAY BE EVIDENCED BY SHORTNESS OF BREATH, COUGH, CHEST PAIN, CYANOSIS (BLuish DISCOLORATION OF THE SKIN), CLUBBING OF THE FINGERS, FATIGUE AND WEIGHT LOSS.

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AGGRAVATED MEDICAL CONDITIONS

PREEXISTING SKIN AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL. IMPAIRED LUNG FUNCTION FROM PREEXISTING DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL.

OTHER HEALTH EFFECTS

THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, THE NATIONAL TOXICOLOGY PROGRAM AND THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER HAVE DETERMINED THERE IS SUFFICIENT EVIDENCE FOR THE CARCINOGENICITY OF ASBESTOS IN BOTH HUMANS AND EXPERIMENTAL ANIMALS. THEREFORE, THE HANDLING PROCEDURES AND SAFETY PRECAUTIONS IN THIS MSDS SHOULD BE FOLLOWED TO MINIMIZE EMPLOYEE'S EXPOSURE.

SEE SECTION VI FOR ADDITIONAL HEALTH INFORMATION.

SECTION IV OCCUPATIONAL EXPOSURE LIMITS

NO.	PEL/TWA	OSHA	PEL/CEILING	TLV/TWA	ACGIH	TLV/STEL	OTHER
P	0.2 F/CC		1 F/CC*	2 F/CC,A1			
P1				0.5 F/CC,A1			
P2				2 F/CC,A1			
P3				0.2 F/CC,A1			
P4				2 F/CC,A1			

F/CC= FIBERS/CUBIC CENTIMETER; *30-MINUTE EXCURSION LIMIT. P1= AMOSITE; P2= CHRYSOTILE; P3= CROCIDOLITE; P4= OTHER FORMS.

SECTION V EMERGENCY AND FIRST AID PROCEDURES**EYE CONTACT**

FLUSH EYES WITH PLENTY OF WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION.

SKIN CONTACT

REMOVE CONTAMINATED CLOTHING/SHOES AND WIPE EXCESS FROM SKIN. FLUSH SKIN WITH WATER. FOLLOW BY WASHING WITH SOAP AND WATER. IF IRRITATION OCCURS, GET MEDICAL ATTENTION. DO NOT REUSE CLOTHING UNTIL CLEANED.

INHALATION

REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. GET MEDICAL ATTENTION.

INGESTION

DO NOT INDUCE VOMITING. IN GENERAL, NO TREATMENT IS NECESSARY UNLESS LARGE QUANTITIES OF MATERIAL ARE INGESTED. HOWEVER, GET MEDICAL ADVICE.

SECTION VI SUPPLEMENTAL HEALTH INFORMATION

ASBESTOS CAUSED NO DOSE-RELATED INCREASE IN SISTER-CHROMATID EXCHANGE LEVELS IN CHO-K1 CELLS, HUMAN FIBROBLASTS OR HUMAN LYMPHOBLASTOID CELLS. HOWEVER, MITOTIC DELAY WAS INDUCED IN CHO-K1 CELLS AND HUMAN FIBROBLASTS. CHINESE HAMSTER OVARIAN FIBROBLASTS SHOWED AN INCREASE IN THE SISTER CHROMATID EXCHANGE RATE UPON EXPOSURE TO ASBESTOS. ESCHERICHIA COLI AND SALMONELLA TYPHIMURIUM SHOWED ASBESTOS NOT TO BE MUTAGENIC. CYTOGENETICS IN VITRO ASSAY FINDINGS WERE POSITIVE; ASBESTOS WAS NOT METABOLICALLY ACTIVATED.

MARKED TO EXTREME HYPERPLASIA OF THE BONE MARROW AND ABERRATIONS OF HUMORAL AND CELLULAR IMMUNITY HAVE BEEN REPORTED IN INDIVIDUALS EXPOSED TO ASBESTOS.

THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER HAS CONCLUDED THE FOLLOWING: "CIGARETTE SMOKING AND OCCUPATIONAL EXPOSURE TO ASBESTOS FIBERS INCREASES LUNG CANCER INCIDENCE INDEPENDENTLY; WHEN THEY OCCUR TOGETHER, THEY ACT MULTIPLICATIVELY." THE HANDLING PROCEDURES AND SAFETY PRECAUTIONS IN THIS MSDS SHOULD BE FOLLOWED TO MINIMIZE EMPLOYEE EXPOSURE.

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SECTION VII **PHYSICAL DATA**

BOILING POINT: NOT AVAILABLE (DEG F)	SPECIFIC GRAVITY: >1 (H2O=1)	VAPOR PRESSURE: NOT AVAILABLE (MM HG)
MELTING POINT: NOT AVAILABLE (DEG F)	SOLUBILITY: NEGLIGIBLE (IN WATER)	VAPOR DENSITY: NOT AVAILABLE (AIR=1)
EVAPORATION RATE (N-BUTYL ACETATE = 1): NOT AVAILABLE		

APPEARANCE AND ODOR:
FIBROUS SOLID

SECTION VIII **FIRE AND EXPLOSION HAZARDS**

FLASH POINT AND METHOD:
NONE

FLAMMABLE LIMITS /% VOLUME IN AIR
LOWER: - UPPER: -

EXTINGUISHING MEDIA
USE WATER FOG, FOAM, DRY CHEMICAL OR CO2.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

MATERIAL WILL NOT BURN UNLESS PREHEATED. DO NOT ENTER CONFINED FIRE SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS), INCLUDING A POSITIVE PRESSURE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

SECTION IX **REACTIVITY**

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS

THERMAL DECOMPOSITION PRODUCTS ARE HIGHLY DEPENDENT ON THE COMBUSTION CONDITIONS. A COMPLEX MIXTURE OF AIRBORNE PARTICULATES AND GASES WILL EVOLVE WHEN THIS MATERIAL UNDERGOES PYROLYSIS OR COMBUSTION.

SECTION X **EMPLOYEE PROTECTION**
-----**RESPIRATORY PROTECTION**

DO NOT BREATHE DUST. IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SEC. IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.1001 OR 1926.58 USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR EQUIPPED WITH HIGH-EFFICIENCY PARTICULATE CARTRIDGES. FOR ADDITIONAL REQUIREMENTS, REFER TO 29 CFR 1926.58(H).

PROTECTIVE CLOTHING

AVOID CONTACT WITH EYES. WEAR SAFETY GLASSES OR GOGGLES AS APPROPRIATE. AVOID CONTACT WITH SKIN AND CLOTHING. WEAR CHEMICAL-RESISTANT GLOVES AND PROTECTIVE CLOTHING. FOR ADDITIONAL REQUIREMENTS, REFER TO 29 CFR 1926.58(I).

ADDITIONAL PROTECTIVE MEASURES

FOR ADDITIONAL REQUIREMENTS, REFER TO 29 CFR 1926.58(G).

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SECTION XI **ENVIRONMENTAL PROTECTION**

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SPILL OR LEAK PROCEDURES

PREVENT BODILY CONTACT WITH SPILLED MATERIAL. WEAR PROTECTIVE CLOTHING AND APPROPRIATE RESPIRATOR. VACUUM THE AREA WITH A VACUUM CLEANER EQUIPPED WITH HIGH-EFFICIENCY PARTICULATE AEROSOL (HEPA)

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FILTERS. FOR ADDITIONAL REQUIREMENTS ON CLEANUP AND DISPOSAL, REFER TO 29 CFR 1926.58(L). AVOID GENERATING DUST. PUT INTO CONTAINERS FOR DISPOSAL.

SECTION XII

SPECIAL PRECAUTIONS

FOR ADDITIONAL REQUIREMENTS, REFER TO 29 CFR 1926.58 OR 29 CFR 1910.1001, AS APPROPRIATE.

SECTION XIII

TRANSPORTATION REQUIREMENTS

DEPARTMENT OF TRANSPORTATION CLASSIFICATION:

ASBESTOS WITH 1 POUND OR GREATER OF FRIABLE ASBESTOS PER CONTAINER IS REGULATED BY DOT IN CLASS ORM-E.

NONFRIABLE ASBESTOS AND FRIABLE ASBESTOS IN QUANTITIES OF LESS THAN 1 POUND PER CONTAINER ARE NOT REGULATED BY DOT.

D.O.T. PROPER SHIPPING NAME:

HAZARDOUS SUBSTANCE, SOLID, N.O.S.

OTHER REQUIREMENTS:

NA 9188

SECTION XIV

OTHER REGULATORY CONTROLS

THIS MATERIAL IS LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE EDS SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

SECTION XV

STATE REGULATORY INFORMATION

THE FOLLOWING CHEMICALS ARE SPECIFICALLY LISTED BY INDIVIDUAL STATES; OTHER PRODUCT SPECIFIC HEALTH AND SAFETY DATA IN OTHER SECTIONS OF THE MSDS MAY ALSO BE APPLICABLE FOR STATE REQUIREMENTS. FOR DETAILS ON YOUR REGULATORY REQUIREMENTS YOU SHOULD CONTACT THE APPROPRIATE AGENCY IN YOUR STATE.

STATE LISTED COMPONENT

PERCENT

STATE CODE

ASBESTOS
(CAS NO: 1332-21-4)

100

CA, FL, IL, MA, ME, MN, PA, RI,
CA65

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CA = CALIFORNIA HAZ. SUBST. LIST; CA65 = CALIFORNIA SAFE DRINKING WATER AND TOXICS ENFORCEMENT ACT LIST; FL = FLORIDA SUBST. LIST; IL = ILLINOIS TOX. SUBST. LIST; MA = MASSACHUSETTS SUBST. LIST; ME = MAINE HAZ SUBST. LIST; MN = MINNESOTA HAZ. SUBST. LIST; NJ = NEW JERSEY HAZ. SUBST. LIST; PA = PENNSYLVANIA HAZ. SUBST. LIST; RI = RHODE ISLAND HAZ. SUBST. LIST.

THIS MATERIAL CONTAINS A CHEMICAL OR CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND/OR REPRODUCTIVE TOXICITY.

SECTION XVI

SPECIAL NOTES

THIS MSDS REVISION HAS CHANGES IN SECTIONS XIII, XV. SEE ENVIRONMENTAL DATA SHEET FOR WASTE DISPOSAL AND OTHER ENVIRONMENTAL INFORMATION.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

DATE PREPARED: APRIL 03, 1992

G. A. VAN GELDER

BE SAFE
READ OUR PRODUCT
SAFETY INFORMATION ...AND PASS IT ON
(PRODUCT LIABILITY LAW
REQUIRES IT)

SHELL OIL COMPANY
PRODUCT SAFETY AND COMPLIANCE
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HOUSTON, TX 77210

LAM 026470

ABS-044423



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PRODUCT ► ASBESTOS

PRODUCT
CODE ► WWWW

SECTION I

PRODUCT/COMPOSITION

NO.	COMPONENT	CAS NUMBER	PERCENT
P	ASBESTOS	1332-21-4	100

SECTION II

SARA TITLE III INFORMATION

NO.	EHS RQ (LBS) (*1)	EHS TPQ (LBS) (*2)	SEC 313 (*3)	313 CATEGORY (*4)	311/312 CATEGORIES (*5)
P			YES		H-1, H-2

FOOTNOTES

- *1 = REPORTABLE QUANTITY OF EXTREMELY HAZARDOUS SUBSTANCE, SEC.302
- *2 = THRESHOLD PLANNING QUANTITY, EXTREMELY HAZARDOUS SUBSTANCE, SEC 302
- *3 = TOXIC CHEMICAL, SEC 313
- *4 = CATEGORY AS REQUIRED BY SEC 313 (40 CFR 372.65 C), MUST BE USED ON TOXIC RELEASE INVENTORY FORM
- *5 = HAZARD CATEGORY FOR SARA SEC. 311/312 REPORTING
 - HEALTH H-1 = IMMEDIATE (ACUTE) HEALTH HAZARD H-2 = DELAYED (CHRONIC) HEALTH HAZARD
 - PHYSICAL P-3 = FIRE HAZARD P-4 = SUDDEN RELEASE OF PRESSURE HAZARD
 - P-5 = REACTIVE HAZARD

SECTION III

ENVIRONMENTAL RELEASE INFORMATION

EPA - COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT. UNDER EPA-CERCLA ("SUPERFUND") RELEASES TO AIR, LAND OR WATER WHICH EXCEED THE REPORTABLE QUANTITY MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER, 800-424-8802.

THE REPORTABLE QUANTITY (RQ) FOR A RELEASE OF THIS MATERIAL IS 1 LB.

SECTION IV

RCRA INFORMATION

IF THIS MATERIAL BECOMES A WASTE, IT WOULD NOT BE A HAZARDOUS WASTE BY RCRA CRITERIA (40 CFR 261). PLACE IN AN APPROPRIATE DISPOSAL FACILITY IN COMPLIANCE WITH LOCAL REGULATIONS.

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DATE PREPARED: JULY 05, 1989

SHELL OIL COMPANY
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FOR ADDITIONAL INFORMATION ON THIS ENVIRONMENTAL DATA PLEASE CALL
(713) 241-2252

FOR EMERGENCY ASSISTANCE PLEASE CALL
SHELL: (713) 473-9461
CHEMTREC: (800) 424-9300

LAM 026472

ABS-044425