

SPIRAX(R) HEAVY DUTY GEAR OIL 80W-90 (MIL-L-2105E)  
59210  
03/03/97

SHELL MATERIAL SAFETY DATA SHEET  
BE SAFE. READ OUR PRODUCT SAFETY INFORMATION ... AND PASS IT ON.  
PRODUCT LIABILITY LAW REQUIRES IT!

\*\*\*\*\* MATERIAL SAFETY DATA SHEET 864020 - 08  
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SPIRAX(R) HEAVY DUTY GEAR OIL SH MSDS: 864020 - 08 T  
03/03/97  
80W-90 (MIL-L-2105E)

MANUFACTURER'S NAME AND ADDRESS  
SHELL OIL COMPANY  
PRODUCT SAFETY & COMPLIANCE  
P.O. BOX 4320  
HOUSTON, TX 77210

TELEPHONE NUMBERS:  
24 HOUR EMERGENCY ASSISTANCE  
SHELL: 713-473-9461 CHEMTREC: 800-424-9300

GENERAL MSDS ASSISTANCE  
SHELL: 713-241-4819

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SECTION I		NAME
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PRODUCT:		SPIRAX(R) HEAVY DUTY GEAR OIL
		80W-90 (MIL-L-2105E)
CHEM NAME:		MIXTURE (SEE SECTION II-A)
		ACUTE HEALTH HAZARD:
		1
CHEM FAMILY:		PETROLEUM HYDROCARBON; GEAR OIL
		FIRE HAZARD:
		1
SHELL CODE:		59210
		REACTIVITY:
		0

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SECTION II-A		PRODUCT/INGREDIENT
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NO.	COMPOSITION	CAS	PERCENT
P	SPIRAX HEAVY DUTY GEAR OIL 80W-90 (MIL-L-2105E)		MIXTURE 100
1	HIGHLY REFINED PETROLEUM OILS		MIXTURE* 90-95
2	ADDITIVES		MIXTURE <10

\* MAY CONTAIN: 64742-18-3, 64742-46-7, 64742-52-5, 64742-53-6, 64742-57-0  
 NFPA HAZARD RATING: HEALTH 0 FIRE 1 REACTIVITY 0

SECTION II-B I ACUTE TOXICITY DATA

NO.	ACUTE ORAL LD50 LC50	ACUTE DERMAL LD50	ACUTE INHALATION
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P	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
1	>5.0 G/KG (RAT)*	>5.0 G/KG (RABBIT)*	NOT AVAILABLE

\* BASED ON API STUDIES.

SECTION III I HEALTH INFORMATION

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

EYE CONTACT:  
 BASED ON COMPONENT INFORMATION PRODUCT IS NO MORE THAN MINIMALLY IRRITATING TO THE EYES.

SKIN CONTACT:

BASED ON COMPONENT INFORMATION PRODUCT IS NO MORE THAN MILDLY IRRITATING TO THE SKIN. PROLONGED AND REPEATED CONTACT CAN RESULT IN VARIOUS SKIN DISORDERS SUCH AS DERMATITIS. FOLLICULITIS OR OIL ACNE.

INHALATION:

INHALATION OF VAPORS (GENERATED AT HIGH TEMPERATURES ONLY) OR OIL MIST FROM THIS PRODUCT MAY CAUSE MINOR IRRITATION OF THE MUCOUS MEMBRANES OF THE UPPER RESPIRATORY TRACT.

INGESTION:

BASED ON COMPONENT INFORMATION THIS PRODUCT IS NO MORE THAN SLIGHTLY TOXIC IF SWALLOWED.

SIGNS AND SYMPTOMS:

IRRITATION AS NOTED ABOVE.

AGGRAVATED MEDICAL CONDITIONS:

PREEXISTING SKIN AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

OTHER HEALTH EFFECTS:

THIS PRODUCT AND ITS COMPONENTS ARE NOT CLASSIFIED AS CARCINOGENS BY INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC), NATIONAL TOXICOLOGY PROGRAM (NTP) OR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

FOR A SPANISH TRANSLATION OF THIS MSDS, CALL 1-800-240-MSDS.

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SECTION IV | OCCUPATIONAL EXPOSURE LIMITS  
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NO.	OSHA		ACGIH		OTHER
	PEL/TWA	PEL/CEILING	TLV/TWA	TLV/STEL	
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P 5 MG/M3\* NONE 5 MG/M3\* 10 MG/M3\* NONE

\*OIL MIST, MINERAL

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SECTION V | EMERGENCY AND FIRST AID PROCEDURES  
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EYE CONTACT: FLUSH WITH WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN.  
GET  
MEDICAL ATTENTION.

SKIN CONTACT: REMOVE CONTAMINATED CLOTHING AND WIPE EXCESS OFF. WASH WITH  
SOAP  
AND WATER OR A WATERLESS HAND CLEANER FOLLOWED BY SOAP AND  
WATER.  
IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

INHALATION: REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS  
DIFFICULT. GET MEDICAL ATTENTION.

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

NOTE TO PHYSICIAN: IN GENERAL, EMESIS INDUCTION IS UNNECESSARY IN HIGH  
VISCOSITY, LOW VOLATILITY PRODUCTS, I.E., MOST OILS AND  
GREASES.

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SECTION VI | SUPPLEMENTAL HEALTH INFORMATION  
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AMOCO HAS REPORTED TO THE U.S. EPA PURSUANT TO SECTION 8(E) OF TSCA THAT A  
SAMPLE OF HYDROTREATED MIDDLE DISTILLATE (CAS REGISTRY NUMBER 64742-46-7)  
APPLIED REPEATEDLY TO THE SKIN OF EXPERIMENTAL ANIMALS OVER THEIR LIFETIME

PRODUCED A WEAK TUMORIGENIC RESPONSE IN THE SKIN. THE FULL REFINING/  
PROCESS  
HISTORY OF THIS SAMPLE WAS NOT PROVIDED IN AMOCOS SUBMISSION.

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SECTION VII | PHYSICAL DATA  
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BOILING POINT (DEG F): HG): NOT AVAILABLE	SPECIFIC GRAVITY (H2O=1):  0.8973	VAPOR PRESSURE (MM  <0.1
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MELTING POINT (DEG F): (AIR=1): -16.6 (POUR POINT)	SOLUBILITY (IN WATER):  NEGLIGIBLE	VAPOR DENSITY  NOT AVAILABLE
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VISCOSITY: 14.4  
(CS @ 212 DEG F)

EVAPORATION RATE (NORMAL BUTYL ACETATE = 1): NOT AVAILABLE

APPEARANCE AND ODOR: BROWN LIQUID. SLIGHT HYDROCARBON ODOR.

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SECTION VIII | FIRE AND EXPLOSION HAZARDS  
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FLASH POINT AND METHOD: FLAMMABLE LIMITS/% VOLUME IN AIR:

310 DEG F (PMCC)

LOWER: N/AV

UPPER: N/AV

EXTINGUISHING MEDIA:

USE WATER FOG, FOAM, DRY CHEMICAL OR CO2. DO NOT USE A DIRECT STREAM OF WATER. PRODUCT WILL FLOAT AND CAN BE REIGNITED ON SURFACE OF WATER.

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.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

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SECTION IX |

REACTIVITY  
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STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID:

AVOID HEAT, OPEN FLAMES AND OXIDIZING MATERIALS.

HAZARDOUS DECOMPOSITION PRODUCTS:

THERMAL DECOMPOSITION PRODUCTS ARE HIGHLY DEPENDENT ON THE COMBUSTION CONDITIONS. A COMPLEX MIXTURE OF AIRBORNE SOLID, LIQUID, PARTICULATES AND

GASES WILL EVOLVE WHEN THIS MATERIAL UNDERGOES PYROLYSIS OR COMBUSTION.

HYDROGEN SULFIDE, CARBON MONOXIDE AND OTHER UNIDENTIFIED ORGANIC COMPOUNDS

MAY BE FORMED UPON COMBUSTION.

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SECTION X |

EMPLOYEE PROTECTION  
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RESPIRATORY PROTECTION:

IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SECTION IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS AND PARTICULATES.

PROTECTIVE CLOTHING:

WEAR CHEMICAL RESISTANT GLOVES AND OTHER PROTECTIVE CLOTHING AS REQUIRED TO MINIMIZE SKIN CONTACT. WEAR SAFETY GOGGLES TO AVOID EYE CONTACT. TEST DATA FROM PUBLISHED LITERATURE AND/OR GLOVE AND CLOTHING MANUFACTURERS INDICATE THE BEST PROTECTION IS PROVIDED BY NITRILE GLOVES.

ADDITIONAL PROTECTIVE MEASURES:

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SECTION XI | ENVIRONMENTAL PROTECTION

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SPILL OR LEAK PROCEDURES:

MAY BURN ALTHOUGH NOT READILY IGNITABLE. USE CAUTIOUS JUDGMENT WHEN CLEANING UP LARGE SPILLS. \*\*\* LARGE SPILLS \*\*\* WEAR RESPIRATOR AND PROTECTIVE CLOTHING AS APPROPRIATE. SHUT OFF SOURCE OF LEAK IF SAFE TO DO SO. DIKE AND CONTAIN. REMOVE WITH VACCUM TRUCKS OR PUMP TO STORAGE SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND, OR OTHER SUITABLE MATERIALS; DISPOSE OF PROPERLY. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE. \*\*\* SMALL SPILLS \*\*\* TAKE UP WITH AN ABSORBENT MATERIAL AND DISPOSE OF

PROPERLY.

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SECTION XII | SPECIAL PRECAUTIONS  
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MINIMIZE SKIN CONTACT. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING OR USING TOILET FACILITIES. LAUNDRY CONTAMINATED CLOTHING BEFORE REUSE. PROPERLY DISPOSE OF CONTAMINATED LEATHER ARTICLES, INCLUDING SHOES, THAT CANNOT BE DECONTAMINATED. STORE IN A COOL, DRY PLACE WITH ADEQUATE VENTILATION. KEEP AWAY FROM OPEN FLAMES AND HIGH TEMPERATURES.

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SECTION XIII | TRANSPORTATION REQUIREMENTS  
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DEPARTMENT OF TRANSPORTATION CLASSIFICATION:  
NOT HAZARDOUS BY D.O.T. REGULATIONS

D.O.T. PROPER SHIPPING NAME:

OTHER REQUIREMENTS:

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SECTION XIV | OTHER REGULATORY CONTROLS  
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THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

PROTECTION OF STRATOSPHERIC OZONE (PURSUANT TO SECTION 611 OF THE CLEAN AIR ACT



AMENDMENTS OF 1990): PER 40 CFR PART 82, THIS PRODUCT DOES NOT CONTAIN NOR WAS IT DIRECTLY MANUFACTURED WITH ANY CLASS I OR CLASS II OZONE DEPLETING SUBSTANCES.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE ATTACHED ENVIRONMENTAL DATA SHEET (EDS) SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

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SECTION XV | STATE REGULATORY INFORMATION  
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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	CAS NUMBER	PERCENT	STATE CODE
SOL. REF., HYDROTREATED, ACID TREATED HEAVY NAPHTHENIC DIST.	64742-18-3	0-15	MA
HYDROTREATED LIGHT NAPHTHENIC DISTILLATE	64742-53-6	0-20	MA

CA = CALIFORNIA HAZ. SUBST. LIST; CA65C, CA65R, CA65C/R = CALIFORNIA SAFE DRINKING WATER AND TOXICS ENFORCEMENT ACT OF 1986 OR PROPOSITION 65 LIST; CT = CONNECTICUT TOXIC. SUBST. LIST; FL = FLORIDA SUBST. LIST; IL = ILLINOIS SUBST. LIST; LA = LOUISIANA HAZ. 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.

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SECTION XVI |

SPECIAL NOTES  
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MSDS REVISED IN SECTION II-A TO SHOW REVISED COMPOSITION, SECTION II-B WITH REVISED TOX DATA AND EDS SECTION I. THE OSHA HAZARD EVALUATION AND REGULATORY STATUS OF THE PRODUCT HAS NOT CHANGED. A SPANISH TRANSLATION OF THIS MSDS MAY BE OBTAINED BY CALLING 1-800-240-MSDS.

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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.

WE ARE PROVIDING OUR MOST RECENT MATERIAL SAFETY DATA SHEET AND/OR ENVIRONMENTAL DATA SHEET. IF YOU WISH TO RECEIVE UPDATES TO THIS INFORMATION, PLEASE CALL SHELL'S GENERAL MSDS ASSISTANCE LINE (713-241-4819) TO ENSURE THAT YOU ARE ADDED TO SHELL'S REGULAR MSDS DISTRIBUTION SYSTEM.

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

SHELL OIL COMPANY  
PRODUCT SAFETY AND  
P. O. BOX 4320  
HOUSTON, TX. 77210

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\*\*\*\*\* ENVIRONMENTAL DATA SHEET 864020 - 06 \*\*\*\*\*

EDS: 864020 - 06 T

03/03/97

PRODUCT NAME: SPIRAX(R) HEAVY DUTY GEAR OIL 80W-90 (MIL-L-2105E)

PRODUCT CODE: 59210

MANUFACTURER'S NAME AND ADDRESS

SHELL OIL COMPANY  
P.O. BOX 4320  
HOUSTON, TX 77210

TELEPHONE NUMBERS:

24 HOUR EMERGENCY ASSISTANCE  
SHELL: 713-473-9461 CHEMTREC: 800-424-9300

FOR ADDITIONAL INFORMATION ON THIS ENVIRONMENTAL DATA PLEASE  
CALL 713-241-2252

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SECTION I | PRODUCT COMPOSITION  
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NO. COMPOSITION CAS PERCENT  
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P	SPIRAX HEAVY DUTY GEAR OIL 80W-90 (MIL-L-2105E)	MIXTURE	100
1	HIGHLY REFINED PETROLEUM OILS	MIXTURE*	90-95
2	ADDITIVES	MIXTURE	<10

\* MAY CONTAIN: 64742-18-3, 64742-46-7, 64742-52-5, 64742-53-6, 64742-57-0

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SECTION II | SARA TITLE III INFORMATION  
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NO. EHS RQ*	EHS TPQ*	SEC-313	313 CATEGORY	311/312
(*1)	(*2)	(*3)	(*4)	(*5)
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BASED ON THE DATA AVAILABLE TO SHELL THIS PRODUCT IS NOT REGULATED BY SARA, TITLE III.

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- \*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 372.42), 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
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SECTION III | ENVIRONMENTAL RELEASE INFORMATION

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THIS PRODUCT IS COVERED BY EPA'S COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA) PETROLEUM EXCLUSION. THEREFORE, RELEASES TO AIR, LAND, OR WATER ARE NOT REPORTABLE UNDER CERCLA ("SUPERFUND"). HOWEVER, UNDER SECTION 311 OF EPA'S CLEAN WATER ACT (CWA),

THIS PRODUCT IS CONSIDERED AN OIL. AS SUCH, SPILLS INTO OR LEADING TO SURFACE WATERS THAT CAUSE A SHEEN MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER, 800-424-8802.

THIS PRODUCT IS AN OIL UNDER 49 CFR (DOT) PART 130. IF SHIPPED BY RAIL OR HIGHWAY IN A TANK WITH A CAPACITY OF 3,500 GALLONS OR MORE, IT IS SUBJECT TO THE REQUIREMENTS OF PART 130. MIXTURE SOLUTIONS IN WHICH THIS PRODUCT IS PRESENT AT 10% OR MORE MAY ALSO BE SUBJECT TO THIS RULE.

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SECTION IV | RCRA INFORMATION

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IF THIS PRODUCT 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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COMPANY	SHELL OIL
77210	P.O. BOX 4320 HOUSTON, TX

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

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THIS MSDS HAS BEEN PROVIDED IN AN ELECTRONIC FORMAT FOR USE IN THE CHEMTREC EMERGENCY RESPONSE PROGRAM AND/OR OTHER APPROVED PROGRAMS. THIS FORMAT MAY CONTAIN BLANKS WHERE INFORMATION WAS NOT AVAILABLE OR NOT APPLICABLE AND THEREFORE MAY NOT BE FULLY COMPLIANT WITH THE OSHA HAZARD COMMUNICATION STANDARD. IF YOU PURCHASE OR USE THIS SHELL PRODUCT AND HAVE NOT RECEIVED A MSDS FROM SHELL PLEASE CONTACT US AND WE WILL PROVIDE ONE. THIS WILL

ENSURE  
THAT YOU RECEIVE UPDATES OF THIS INFORMATION.

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