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**EXXON COMPANY, U.S.A.**  
A DIVISION OF EXXON CORPORATION

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# MATERIAL SAFETY DATA SHEET

EXXON COMPANY, U.S.A. P.O. BOX 2180 HOUSTON, TX 77252-2180

## A. IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME

**CORAY 22**

PRODUCT CODE

341471 - 01471

PRODUCT CATEGORY

Petroleum Lubricating Oil

PRODUCT APPEARANCE AND ODOR

Clear liquid, yellow color  
Mild, bland petroleum odor

MEDICAL EMERGENCY TELEPHONE NUMBER

(713) 656-3424

## B. COMPONENTS AND HAZARD INFORMATION

COMPONENTS	CAS NO. OF COMPONENTS	APPROXIMATE CONCENTRATION
Distillates (petroleum), hydrotreated light naphthenic and	64742-53-6	100%
Distillates (petroleum), hydrotreated heavy naphthenic	and 64742-52-5	

All components of this product are listed on the U.S. TSCA inventory.

See Section E for Health and Hazard Information.

See Section H for additional Environmental Information.

### HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

Health	Flammability	Reactivity	BASIS
1	1	0	Recommended by Exxon

### EXPOSURE LIMIT FOR TOTAL PRODUCT

5 mg/m3 for oil mist (aerosol) for an 8-hour workday

### BASIS

OSHA Regulation 29 CFR 1910.1000 and recommended by the American Conference of Governmental Industrial Hygienists (ACGIH). ACGIH states that the air is to be sampled by a method that does not collect vapor; in addition, it lists a 10 mg/m3 STEL.

## C. PRIMARY ROUTES OF ENTRY AND EMERGENCY AND FIRST AID PROCEDURES

### EYE CONTACT

If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

### SKIN

In case of skin contact, remove any contaminated clothing and wash skin with soap and water. Launder or dry-clean clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within

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the first few hours may significantly reduce the ultimate extent of injury.

**INHALATION**

Vapor pressure is very low. Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor from hot product, immediately remove from exposure and call a physician. If breathing is irregular or has stopped, start resuscitation; administer oxygen, if available. If overexposed to oil mist, remove from further exposure until excessive oil mist condition subsides.

**INGESTION**

If ingested, DO NOT induce vomiting; call a physician immediately.

**D. FIRE AND EXPLOSION HAZARD INFORMATION**

**FLASH POINT (MINIMUM)**

157°C (315°F)  
ASTM D 92, Cleveland Open Cup

**AUTOIGNITION TEMPERATURE**

Greater than 260°C (500°F)

**NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION BASIS**

Health 1    Flammability 1    Reactivity 0    Recommended by Exxon

**HANDLING PRECAUTIONS**

Use product with caution around heat, sparks, pilot lights, static electricity, and open flame.

**FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)**

Estimated values: Lower Flammable Limit 0.9%    Upper Flammable Limit 7%

**EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES**

Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Eighth Edition (1984):

Use water spray, dry chemical, foam or carbon dioxide to extinguish the fire. Use water to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for men attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing of gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

**DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS**

Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes and other decomposition products, in the case of incomplete combustion.

**"EMPTY" CONTAINER WARNING**

"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

## E. HEALTH AND HAZARD INFORMATION

### VARIABILITY AMONG INDIVIDUALS

Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

### EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)

Prolonged or repeated skin contact may cause skin irritation.

### NATURE OF HAZARD AND TOXICITY INFORMATION

In accordance with the current OSHA Hazard Communication Standard criteria, this product does not require a cancer hazard warning. This is because the product is formulated from base stocks which are severely hydrotreated, severely solvent extracted, and/or processed by mild hydrotreatment and extraction. Alternatively, it may consist of components not otherwise affected by IARC criteria, such as atmospheric distillates or synthetically derived materials, and as such is not characterized by current IARC classification criteria.

Prolonged or repeated skin contact with this product tends to remove skin oils, possibly leading to irritation and dermatitis; however, based on human experience and available toxicological data, this product is judged to be neither a "corrosive" nor an "irritant" by OSHA criteria.

Product contacting the eyes may cause eye irritation.

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

This product is judged to have an acute oral LD50 (rat) greater than 5 g/kg of body weight, and an acute dermal LD50 (rabbit) greater than 3.16 g/kg of body weight.

### PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE

None Recognized

## F. PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes.

### BOILING RANGE

IBP Approximately 241°C (465°F)  
by ASTM D 2887

### SPECIFIC GRAVITY (15.6 C/15.8 C)

0.90

### MOLECULAR WEIGHT

Approximately 310

### pH

Essentially neutral

### POUR, CONGEALING OR MELTING POINT

-18°C (0°F)  
Pour Point by ASTM D 97

### VISCOSITY

20 cSt @ 40°C

### VAPOR PRESSURE

Less than 0.01 mm Hg @ 20°C

### VAPOR DENSITY (AIR = 1)

Greater than 5

### PERCENT VOLATILE BY VOLUME

Negligible from open container  
in 4 hours @ 38°C (100°F)

### EVAPORATION RATE @ 1 ATM. AND 25 C (77 F)

(n-BUTYL ACETATE = 1)  
Less than 0.01

### SOLUBILITY IN WATER @ 1 ATM. AND 25 C (77 F)

Negligible; less than 0.1%

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## G. REACTIVITY

This product is stable and will not react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc., as this presents a serious explosion hazard.

## H. ENVIRONMENTAL INFORMATION

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Open all windows and doors. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas. Assure conformity with applicable governmental regulations.

THE FOLLOWING INFORMATION MAY BE USEFUL IN COMPLYING WITH VARIOUS STATE AND FEDERAL LAWS AND REGULATIONS UNDER VARIOUS ENVIRONMENTAL STATUTES:

**REPORTABLE QUANTITY (RQ), EPA REGULATION 40 CFR 302 (CERCLA Section 102)**  
No RQ for product or any constituent greater than 1% or 0.1% (carcinogen).

**THRESHOLD PLANNING QUANTITY (TPQ), EPA REGULATION 40 CFR 355 (SARA Sections 301-304)**  
No TPQ for product or any constituent greater than 1% or 0.1% (carcinogen).

**TOXIC CHEMICAL RELEASE REPORTING, EPA REGULATION 40 CFR 372 (SARA Section 313)**  
No toxic chemical is present greater than 1% or 0.1% (carcinogen).

**HAZARDOUS CHEMICAL REPORTING, EPA REGULATION 40 CFR 370 (SARA Sections 311-312)**

	Acute	Chronic	Fire	Pressure	Reactive	
EPA HAZARD CLASSIFICATION CODE:	Hazard	Hazard	Hazard	Hazard	Hazard	Not Applicable XXX

## I. PROTECTION AND PRECAUTIONS

### VENTILATION

Use local exhaust to capture vapor, mists or fumes, if necessary. Provide ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. No smoking, flame or other ignition sources.

### RESPIRATORY PROTECTION

Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

### PROTECTIVE GLOVES

Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

### EYE PROTECTION

Use splash goggles or face shield when eye contact may occur.

### OTHER PROTECTIVE EQUIPMENT

Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing, which could result in prolonged or repeated skin contact.

### WORK PRACTICES / ENGINEERING CONTROLS

Keep containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants.

In order to prevent fire or explosion hazards, use appropriate equipment.

Information on electrical equipment appropriate for use with this product may be found in the latest edition of the National Electrical Code (NFPA-70). This document is available from the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269.

### PERSONAL HYGIENE

Minimize breathing vapor, mist or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before re-use. Remove contaminated shoes

and thoroughly clean before re-use; discard if oil-soaked. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

## J. TRANSPORTATION AND OSHA RELATED LABEL INFORMATION

### TRANSPORTATION INCIDENT INFORMATION

For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents, DOT P 5800.3.

### DOT IDENTIFICATION NUMBER

Not applicable

### OSHA REQUIRED LABEL INFORMATION

In compliance with hazard and right-to-know requirements, the following OSHA Hazard Warnings should be found on a label, bill of lading or invoice accompanying this shipment.

(OSHA Hazard Warnings not applicable for this product; therefore, no OSHA warnings would appear on the label.)

Note: Product label will contain additional non-OSHA related information.

The information and recommendations contained herein are, to the best of Exxon's knowledge and belief, accurate and reliable as of the date issued. Exxon does not warrant or guarantee their accuracy or reliability, and Exxon shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product, legal counsel should be consulted to insure proper health, safety and other necessary information is included on the container.

The Environmental Information included under Section H hereof as well as the Hazardous Materials Identification System (HMIS) and National Fire Protection Association (NFPA) ratings have been included by Exxon Company, U.S.A. in order to provide additional health and hazard classification information. The ratings recommended are based upon the criteria supplied by the developers of these rating systems, together with Exxon's interpretation of the available data.

### FOR ADDITIONAL INFORMATION ON HEALTH EFFECTS CONTACT:

DIRECTOR OF INDUSTRIAL HYGIENE  
EXXON COMPANY, U.S.A.  
KELLOGG TOWER, ROOM 550  
P. O. BOX 2180  
HOUSTON, TX 77252-2180  
(713) 656-2443

### FOR OTHER PRODUCT INFORMATION CONTACT:

MANAGER, MARKETING TECHNICAL SERVICES  
EXXON COMPANY, U.S.A.  
ROOM 2355  
P. O. BOX 2180  
HOUSTON, TX 77252-2180  
(713) 656-5949