

DUPONT

-- KEVLAR BRAND FIBER

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MSDS Safety Information
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MSDS Date: 11/19/1999

MSDS Num: CKSQM

Product ID: KEVLAR BRAND FIBER

MFN: 01

Responsible Party

Cage: TO822

Name: DUPONT

Address: 1007 MARKET STREET

City: WILMINGTON DE 19898

Info Phone Number: 1-800-441-3637; 800-453-8527

Emergency Phone Number: 800-424-9300

Resp. Party Other MSDS No.: SP1889

Preparer's Name: EDMUND MERRIMAN

Chemtrec IND/Phone: (800)424-9300

Review Ind: Y

Published: Y
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Contractor Summary
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Cage: TO822

Name: DUPONT

Address: 1007 MARKET STREET

City: WILMINGTON DE 19898

Phone: 1-800-441-3637; 800-453-8527

Cage: TO979

Name: DUPONT ADVANCED FIBERS SYSTEMS

Box: 27001

City: RICHMOND VA 23261

Phone: 800-453-8527
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Ingredients
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Cas: 26125-61-1

Name: POLY(TEREPHTHALOYLCHLORIDE/P-PHENYLENEDIAMINE) (PARA-ARAMID POLYMER)

> Wt: 89.

Cas: 7732-18-5

RTECS #: ZC0110000

Name: WATER, ABSORBED

% low Wt: 0.

% high Wt: 7.

Name: PULP WET-LAP

% low Wt: 35.

% high Wt: 70.

Cas: 7757-82-6

RTECS #: WE1650000

Name: SODIUM SULFATE IN KAVLAR PULP

< Wt: .1

Name: SODIUM SULFATE IN OTHER FORMS

< Wt: 2.

Name: FINISH

< Wt: ?

< Wt: 2.

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Health Hazards Data
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Carcinogenicity Inds - NTP: NO

IARC: NO

OSHA: NO

Effects of Exposure: EYE: FIBER FLY & DUST MAY CAUSE IRRITATION. SKIN:
CONTINUAL RUBBING OF FIBERS & FIBER PIECES ON THE SKIN MAY CAUSE
IRRITATION. INGESTION: KEVLAR IS NONTOXIC WHEN EATEN. INHALATION: KEVLAR IS
TOO BIG TO INHALE INTO THE LUNGS, BUT FIBER DUST & FLY FROM PROCESSING
MAY BE BREATHED INTO THE NOSE & THROAT. WORKING UNPROTECTED IN DUSTY
CONDITIONS MAY CAUSE UPPER RESPIRATORY IRRITATION & COLD-LIKE SYMPTO MS.
CHRONIC: PROCESSING KEVLAR OR MACHINING MATERIALS CONTAINING KEVLAR MAY
CREATE FIBER DUST IN THE AIR SMALL ENOUGH TO BE BREATHED INTO THE LUNGS.
BREATHING HIGH CONCENTRATIONS OF DUST FOR LONG PERIODS MAY CAUSE LUNG
INJURY.

Explanation of Carcinogenicity: NONE OF THE COMPONENTS PRESENT IN THIS MATERIAL
AT CONCENTRATIONS EQUAL TO OR GREATER THAN 0.1% ARE LISTED BY AIRC, NTP,
OSHA, OR ACGIH AS A CARCINOGEN.

Signs And Symptoms Of Overexposure: EYE: IRRITATION. SKIN: IRRITATION.
INHALATION: UPPER RESPIRATORY IRRITATION AND COLD-LIKE SYMPTOMS.

First Aid: EYE: IN CASE OF CONTACT IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER
FOR AT LEAST 15 MINUTES. CALL A PHYSICIAN IF IRRITATION PERSISTS OR DEVELOPS.
INHALATION: IF LARGE AMOUNTS OF FUMES, DUST OR FIBERS ARE INHALED, REMOVE TO
FRESH AIR. IF BREATHING IS DIFFICULT, GIVE OXYGEN & CALL PHYSICIAN. IF
PERSISTENT COUGH OR OTHER SYMPTOMS DEVELOP, GET MEDICAL ATTENTION. SKIN: WASH
WITH SOAP & WATER. USE HAND CREAMS TO SOOTH & MOISTEN IRRITATED
SKIN. GET MEDICAL ATTENTION IF IRRITATION PERSISTS AFTER CONTACT STOPS.
INGESTION: IN CASE OF GASTRO-INTESTINAL DISTRESS FOLLOWING ACCIDENTAL
INGESTION, CALL PHYSICIAN.

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Handling and Disposal
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Spill Release Procedures: WASH, SHOVEL OR MOP UP AND PLACE IN SOLID WASTE
CONTAINERS. FIBER IS NOT BIODEGRADABLE; DO NOT FLUSH TO DRAINS. CLEAN UP
DUSTS AND PULP WITH HIGH EFFICIENCY PARTICULATE AIR(HEPA) FILTERED VACUUM
EQUIPMENT, OR BY WET CLEANING. AVOID THE USE OF DRY SWEEPING OR AIR JET
BLOWING OF FIBERS AND DUST, WHICH CAN RE-SUSPEND RESPIRABLE DUST IN THE AIR.

Waste Disposal Methods: KEVLAR FIBER IS NOT A HAZARDOUS WASTE AS DEFINED BY
REGULATIONS IMPLEMENTING THE RESOURCE CONSERVATION AND RECOVERY ACT(RCRA).
WASTE MATERIALS OF KEVLAR MAY BE TREATED, STORED, TRANSPORTED AND DISPOSED
OF IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS GOVERNING THE DISPOSAL OF
OTHER COMMON OR NON-RCRA REGULATED WASTE MATERIALS.

Handling And Storage Precautions: DO NOT TOUCH MOVING THREADLINES OF KEVLAR
FIBER. ENTANGLEMENT WITH THIS HIGH STRENGTH FIBER CAN SEVERELY CUT OR EVEN
SEVER FINGERS. KEVLAR IS DEGRADED BY ULTRAVIOLET LIGHT. DO NOT STORE IN
DIRECT SUNLIGHT. FLUORESCENT LIGHTING WILL CAUSE DISCOLORATION, BUT WILL
NOT AFFECT FIBER MECHANICAL PROPERTIES

Other Precautions: USE ONLY WITH ADEQUATE VENTILATION. AVOID DUST GENERATION.
DO NOT CONSUME FOOD, DRINK OR TOBACCO IN AREAS WHERE THEY MAY BECOME
CONTAMINATED WITH THIS MATERIAL.

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Fire and Explosion Hazard Information
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Extinguishing Media: WATER, FOAM, DRY CHEMICAL, CARBON DIOXIDE (CO2).

Fire Fighting Procedures: WEAR SELF-CONTAINED BREATHING APPARATUS. KEEP
PERSONNEL REMOVED AND UPWIND OF FIRE. WEAR FULL PROTECTIVE EQUIPMENT (FULL
BUNKER GEAR).

Unusual Fire/Explosion Hazard: KEVLAR FIBER DUST DOES NOT PRESENT AN EXPLOSION
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HAZARD.

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Control Measures
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Respiratory Protection: RESPIRATOR USE MUST BE IN COMPLIANCE WITH OSHA STANDARD 29 CFR 1910.134(THE RESPIRATOR STANDARD). AN AIR PURIFYING RESPIRATOR WITH A DUST/MIST/FUME CARTRIDGE OR CANISTER MAY BE USED UNDER CIRCUMSTANCES MEETING RESPIRATOR STANDARD. DISPOSABLE DUST MASKS EQUIVALENT TO 3M MODEL N95 8210 MAY ALSO BE USED.

Ventilation: IF FUMES, FIBER FLY OR DUSTS ARE GENERATED, USE ENGINEERING CONTROLS (WHERE TECHNICALLY FEASIBLE) WHENEVER NECESSARY TO CONTROL EXPOSURES BELOW LIMITS.

Protective Gloves: WEAR PROTECTIVE GLOVES AND SLEEVES.

Eye Protection: SAFETY GLASSES OR COVERALL GOGGLES.

Other Protective Equipment: ISOLATION, ENCLOSURES, EXHAUSTS AND VENTILATION, WETTING AND DUST COLLECTION SYSTEMS MAY BE USED. USE NON-GREASY MOISTURIZING SKIN CREAM TO PREVENT DRYING.

Work Hygienic Practices: WASH CONTAMINATED CLOTHING BEFORE REUSE.

Supplemental Safety and Health: *DRY AND WET KEVLAR PULP IS PACKAGED IN MOISTURE-PROOF BAGS/BALES TO PREVENT DRYING TO LESS THAN 4% MOISTURE AND POSSIBLE PICKUP OF ELECTROSTATIC CHARGE. IF PACKAGE IS PUNCTURED, RE-MOISTURIZE PULP TO AT LEAST 4% MOISTURE BEFORE USING.

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Physical/Chemical Properties
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HCC: N1

M.P/F.P Text: DOES NOT MELT

Spec Gravity: 1.45G/CC

Solubility in Water: INSOLUBLE

Appearance and Odor: ODORLESS, GOLDEN, SOLID: YARN, FELT, FABRIC, PAPER, PULP, FLOC, STAPLES

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Reactivity Data
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Stability Indicator: YES

Materials To Avoid: NONE REASONABLY FORESEEABLE.

Hazardous Decomposition Products: FIBER DECOMPOSITION TEMPERATURE >400C. AT LOWER TEMPERATURES FINISH MAY BOIL OFF AS A FUME, WHICH SHOULD BE VENTED.

Hazardous Polymerization Indicator: NO

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Toxicological Information
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Toxicological Information: EYE EFFECTS: KEVLAR IS UNTESTED FOR EYE INJURY. SKIN EFFECTS: KEVLAR FIBER IS NOT A SKIN IRRITANT OR A SKIN SENSITIZER IN ANIMALS. SKIN SENSITIZATION HAS NOT BEEN OBSERVED IN HUMAN SKIN PATCH TESTS OR IN INDUSTRIAL EXPERIENCE. ACUTE ORAL EFFECTS: KEVLAR POLYMER HAS VERY LOW TOXICITY BY INGESTION. ORAL LD50 > 7500 MG/KG IN RATS. ACUTE INHALATION EFFECTS: INDUSTRIAL EXPERIENCE SHOWS THE INHALATION OF KEVLAR FIBROUS DUST & FLY MAY CAUSE MECHANICAL IRRITATION OF THE MUCOUS MEMBRANES OF NOSE & THROAT. CHRONIC INHALATION EFFECTS: A 2 YEAR INHALATION STUDY PRODUCED PULMONARY FIBROSIS AT 25, 100 & 400 F/ CC.

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Ecological Information
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Ecological: KEVLAR FIBERS ARE NON-BIO-DEGRADABLE IN THE ENVIRONMENT & DO NOT LEACH MATERIAL TOXIC TO FLORA OR FAUNA. FINISHES & ADDITIVES USED WITH KEVLAR ARE TESTED FOR THEIR POTENTIAL EFFECTS ON MANUFACTURING WASTEWATER TREATMENT SYSTEMS. BIOCOMPATIBILITY & AQUATIC TOXICITY TESTS GIVE THE FOLLOWING RESULTS: FINISHES DO NOT APPEAR TO BE INHIBITORY OR TOXIC TO MICROBES COMMONLY FOUND IN BIOLOGICAL TREATMENT SYSTEMS. BIODEGRADATION

& NORMAL ANTI-FOAM TREATMENTS SHOULD CONTROL FOAMING. DEGRADATION OF SCOURED FINISHES SHOULD NOT RESULT IN INCREASED EFFLUENT TOXICITY. MOST FINISHES ARE SUBSTANTIALLY OR COMPLETELY BIODEGRADABLE, BUT A FEW ARE NOT.

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MSDS Transport Information
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Transport Information: NOT REGULATED.
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Regulatory Information
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Sara Title III Information: SECTION 313: NOT REPORTABLE.

Federal Regulatory Information: TSCA: KEVLAR FIBER PRODUCTS ARE LISTED ON THE TSCA INVENTORY. CLEAN AIR ACT AMENDMENTS OF 1990: KEVLAR FIBER PRODUCTS AND THEIR PACKAGING DO NOT CONTAIN NOR ARE THEY MANUFACTURED WITH ANY OF THE OZONE -DEPLETING SUBSTANCES LISTED IN EITHER CLASS I (CHLOROFLUOROCARBONS, HALONS, CARBON TETRACHLORIDE AND METHYL CHLOROFORM OR CLASS II (HYDROCHLOROFLUOROCARBONS). FDA: SOME BUT NOT ALL, KEVLAR FIBER PRODUCTS ARE APPROVED FOR USE AS ARTICLES OR COMPONENTS OF ARTICLES INTENDED FOR REPEATED CONTACT WITH FOOD (CFR 21 PART 177.1732, 4/92 EDITION).

State Regulatory Information: CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (PROPOSITION 65): KEVLAR FIBER CONTAINS NONE OF THE SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE TOXICITY. PENNSYLVANIA AND NEW JERSEY RIGHT-TO-KNOW LAWS: KEVLAR FIBER IS CONSIDERED AN ARTICLE AND IS NOT SUBJECT TO THE PROVISIONS OF THE PENNSYLVANIA AND NEW JERSEY RIGHT-TO-KNOW LAWS.

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Other Information
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Other Information: CANADA: KEVLAR IS NOT WHIMIS CONTROLLED. THIS MATERIAL IS NOT TDG REGULATED. NFPA RATINGS: HEALTH-0, FLAMMABILITY-1, REACTIVITY-0. NPCA RATINGS: HEALTH-0 * (CHRONIC HEALTH EFFECTS), FLAMMABILITY-1, REACTIVITY-0.

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Transportation Information
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Responsible Party Code: TO822
Trans ID NO: 154525
Product ID: KEVLAR BRAND FIBER
MSDS Prepared Date: 11/19/1999
Review Date: 08/24/2000
MFN: 1
Net Unit Weight: UNKNOWN
Multiple KIT Number: 0
Unit Of Issue: CY
Type Of Container: CYLINDER

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Detail DOT Information
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DOT PSN Code: ZZZ
DOT Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
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Detail IMO Information
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IMO PSN Code: ZZZ
IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION
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Detail IATA Information
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IATA PSN Code: ZZZ
IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
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Detail AFI Information

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AFI PSN Code: ZZZ
AFI Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
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HAZCOM Label

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Product ID: KEVLAR BRAND FIBER
Cage: TO822
Assigned IND: Y
Company Name: DUPONT
Street: 1007 MARKET STREET
City: WILMINGTON DE
Zipcode: 19898
Health Emergency Phone: 800-424-9300
Date Of Label Review: 08/24/2000
Status Code: A
Origination Code: F
Eye Protection IND: NO
Skin Protection IND: NO
Signal Word: NONE
Respiratory Protection IND: NO
Health Hazard: None
Contact Hazard: None
Fire Hazard: None
Reactivity Hazard: None
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