

===== Product Identification =====

Product ID:DIOXANE

MSDS Date:07/19/1985

FSC:6810

NIIN:00-174-6592

MSDS Number: BTRJN

=== Responsible Party ===

Company Name:MALLINCKRODT INC.,SCIENCE PRODUCTS DIVISION

Address:PARIS BYPASS

Box:M

City:PARIS

State:KY

ZIP:40361

Country:US

Info Phone Num:314-982-5000

Emergency Phone Num:314-982-5000

Preparer's Name:NOT PROVIDED

CAGE:62910

=== Contractor Id

entification ===

Company Name:MALLINCKRODT SPECIALTY CHEMICALS CO

Address:222 RED SCHOOL LANE

Box:City:PHILLIPSBURG

State:NJ

ZIP:08865

Country:US

Phone:908-859-2151

CAGE:62910

Company Name:SHAPE PRODUCTS

Address:1127 57TH AVE.

Box:City:OAKLAND

State:CA

ZIP:94621-4427

Country:US

Phone:510-534-1186 OR 800-444-0015

CAGE:3D869

===== Composition/Information on Ingredients =====

Ingred Name:1,4-DIOXANE (DIETHYLENE DIOXIDE) (SARA III)

CAS:123-91-1

RTECS #:JG8225000

OSHA PEL:S, 100 P

PM  
ACGIH TLV:100 PPM  
EPA Rpt Qty:100 LBS  
DOT Rpt Qty:100 LBS

===== Hazards Identification =====

LD50 LC50 Mixture:ORAL LD50 (RAT) IS 4200 MG/KG  
Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES  
Reports of Carcinogenicity:NTP:YES IARC:NO OSHA:NO  
Health Hazards Acute and Chronic:INHALATION-HIGHLY TOXIC BY INHALATION.  
DEATH MAY OCCUR FROM RENAL FAILURE. INGESTION-MAY BE HIGHLY TOXIC  
THROUGH INGESTION. SKIN-CAUSES IRRITATION. EYE-VAPORS CAUSE  
  
IRRITATION. CONTACT MAY CAUSE IRRITATION OR EYE DAMAGE. CHRONIC:  
PROLONGEDEXPOSURE MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION,  
LIVER & KIDNEY DAMAGE.  
Explanation of Carcinogenicity:1,4-DIOXANE IF LISTED AS A CARCINOGEN BY  
NTP.  
Effects of Overexposure:INHALATION-SYMPTOMS INCLUDE IRRITATION OF THE  
RESPIRATORY TRACT, HEADACHE, NAUSEA, VOMITING, DIZZINESS &  
NARCOSIS. INGESTION/SKIN-SYMPTOMS EXPECTED TO PARALLEL INHALATION.  
CHRONIC: LOSS OF APETITE, NAUSEA, ABDOMINAL TEND  
ERNESS.  
Medical Cond Aggravated by Exposure:PERSONS WITH PRE-EXISTING SKIN  
DISORDERS OR EYE PROBLEMS, OR IMPAIRED LIVER, KIDNEY OR RESPIRATORY  
FUNCTIONS MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THE SUBSTANCE.

===== First Aid Measures =====

First Aid:INHALATION:REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE  
ARTIFICIAL RESPIRATION. IF BREATHING IS HARD, GIVE OXYGEN. CALL  
PHYSICIAN. INGEST:IF SWALLOWED, INDUCE VOMITING BY GIVING 2 GLASSES  
OF  
WATER & STICKING FINGER DOWN THROAT. SKIN-IMMEDIATELY FLUSH  
SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MIN. CALL PHYSICIAN.  
EYE-WASH EYE WITH PLENTY OF WATER FOR AT LEAST 15 MIN. GET MEDICAL  
ATTENTION.

===== Fire Fighting Measures =====

Flash Point Method:CC  
Flash Point:=-12.C, 53.6F  
Autoignition Temp:>204.4C, 400.F  
Lower Limits:2.0  
Upper Limits:22.0  
Extinguishing Media:DRY CHEMICAL, FOAM OR CARBON DIOXIDE. WATER SPRAY  
MAY BE USED TO KEEP FIRE

EXPOSED CONTAINERS COOL.

Fire Fighting Procedures:IN THE EVENT OF A FIRE, WEAR FULL PROTECTIVE CLOTHING & NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE PRESSURE DEMAND.

Unusual Fire/Explosion Hazard:ABOVE FLASH POINT, VAPOR-AIR MIXTURES ARE EXPLOSIVE WITHIN FLAMMABLE LIMITS. VAPORS CAN FLOW ALONG SURFACES TO DISTANT IGNITION SOURCES & FLASH BACK.

===== Accidental Release Measures =====

Spill Release Procedures:

VENTILATE AREA OF LEAK OR SPILL. REMOVE ALL SOURCES OF IGNITION. CLEANUP PERSONNEL REQUIRE PROTECTIVE CLOTHING & RESPIRATORY PROTECTION FROM VAPORS. CONTAIN & RECOVER LIQUID WHEN POSSIBLE.

===== Handling and Storage =====

Handling and Storage Precautions:PROTCT AGAINST PHYSICAL DAMAGE. STORE IN COOL, DRY WELL VENTED ALOCATION, AWAY FROM DIRECT SUNLIGHT & ANY AREA WHERE FIRE HAZARD MAY BE ACUTE.

Other Precautions:STORE TIGHTLY CLOSED CONTAINERS. OUTSIDE OR DETACHED STORAGE PREFERRED.

===== Exposure Controls/Personal Protection =====

Respiratory Protection:IF THE TLV IS EXCEEDED A FULL FACEPIECE CHEMICAL CARTRIDGE RESPIRATOR MAY BE WORN, IN GENERAL. ALTERNATIVELY, A SUPPLIED AIR FULL FACEPIECE RESPIRATOR OR AIRLINED HOOD MAY BE WORN.

Ventilation:LOCAL EXHAUST AND/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURE BELOW THE PEL.

Protective Gloves:IMPERVIOUS GLOVES.

Eye Protection:CHEM

ICAL SAFETY GOGGLES/FULL FACE SHIELD

Other Protective Equipment:WEAR IMPERVIOUS PROTECTOVE CLOTHING, INCLUDING BOOTS, GLOVES, LAB COAT, APRON, COVERALLS TO PREVENT SKIN CONTACT.

Work Hygienic Practices:MAINTAIN EYE WASH FOUNTAIN AND QUICK DRENCH FACILITIES IN WORK AREA.

Supplemental Safety and Health

NONE

===== Physical/Chemical Properties =====

HCC:F2

NRC/State Lic Num:NOT RELEVANT

Boiling Pt:=101.1C, 214.F

Melt/Freeze Pt:=11.8C, 53.2F

Vapor Pres:27

Vap

or Density:3.03  
Spec Gravity:1.03  
Evaporation Rate & Reference:2.7 (BU-AC=1)  
Solubility in Water:SOLUBLE  
Appearance and Odor:CLEAR, COLORLESS SOLUTION. FAINT ETHER ODOR.

===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES  
SILVER PERCHLORATE, OXIDIZING AGNETS. DIOXANE MAY REACT WITH HYDROGEN  
IN THE PRESENCE OF RENEY NICKEL ABOVE 210C.  
Stability Condition to Avoid:REACTS WITH AIR TO FORM EXPLOSIVE  
PEROXIDES; EXPOSURE TO SUNLI  
GHT ACCELERATES THIS FORMATION.  
Hazardous Decomposition Products:DECOMPOSES TO CARBON MONOXIDE.

===== Disposal Considerations =====

Waste Disposal Methods:COLLECT AS A HAZARDOUS WASTE AND ATOMIZE IN A  
SUITABLE RCRA APPROVED COMBUSTION CHAMBER OR ABSORB WITH  
VERMICULITE, DRY SAND, EARTH OR SIMILIAR MATERIAL FOR DISPOSAL AS  
HAZARDOUS WASTE IN A RCRA APPRO VED FACILITY. DO NOT FLUSH TO  
SEWER. RQ=1LB.

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