Product ID:FORMIC ACID 88%

MSDS Date:07/13/1987

FSC:6810

NIIN:00-264-8954

MSDS Number: BDQXK === Responsible Party ===

Company Name: MALLINCKRODT, INC

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

CAGE:DO880

=== Contractor Ident

ification ===

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: MALLINCKRODT, INC., SCIENCE PRODUCTS DIV.

Box:BOX M City:PARIS State:KY ZIP:43061 Country:US CAGE:DO880

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

Ingred Name: FORMIC ACID (SARA III)

CAS:64-18-6

RTECS #:LQ4900000 Fraction by Wt: 88% OSHA PEL:5 PPM

ACGIH TLV:5 PPM/10 STEL; 9192

EPA Rpt Qt

y:5000 LBS DOT Rpt Qty:5000 LBS Ingred Name:WATER CAS:7732-18-5 RTECS #:ZC0110000 Fraction by Wt: 12.0% ============= Hazards Identification ======================== Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES Effects of Overexposure: EYES-TISSUE & CORNEAL DAM. SKIN-SEVERE IRRIT; REDNESS, PAIN, BURNS. INHAL-SEVERE IRRIT OF NOSE, THROAT, UPPER RESPIR TRACT; POSS LUNG DAMAGE. INGEST-SERIOUS BURNS, CORROSION OF MOUTH, THROAT, ESOPHAGUS, W/IMMED PAIN, DIFFICULT **SWALLOWING** ;ALSO,ABDOM PAIN,NAUSEA,DIARRHEA,VOMIT;POSS SHORTNESS OF BREATH; DEATH. Medical Cond Aggravated by Exposure: NONE KNOWN First Aid:EYE-FLUSH W/WATER 15 MIN;GET IMMED MED ATTN. SKIN-REMOVE CONTAM CLOTH; WASH AREA W/WATER 15 MIN; IF IRRIT PERSIST, GET MED ATTN. INHAL-GET TO FRESH AIR; GIVE ARTIF RESPIR IF REQD; GET MED ATTN. INGEST-IF C ONSCIOUS, GIVE LGE QTY WATER. DO NOT INDUCE VOMIT; GET MED ATTN. ========== ==== Fire Fighting Measures =========== Flash Point Method:CC

Flash Point Method:CC Flash Point:122F/50C Lower Limits:18

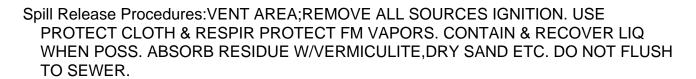
Upper Limits:57

Extinguishing Media:DRY CHEMICAL, FOAM, CARBON DIOXIDE. WATER SPRAY MAY BE USED TO KEEP FIRE-EXPOSED CONTAINERS COOL.

Fire Fighting Procedures: WEAR FULL PROTECT CLOTH & NIOSH-APPROVED SLF-CONTND BREATH APPAR W/FULL FACEPIECE OPER IN PRESS DEMAND MODE/OTHER POS PRESSURE MODE.

Unusual Fire/Explosion Hazard:NOT GIVEN

======= Accidental Release Measu



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

Handling and Storage Precautions: AVOID CONTACT

W/EYES,SKIN,CLOTHING;AVOID BREATHING MIST. KEEP CONTNR CLOSED. USE W/ADEQUATE VENT. WASH THOROUGHLY AFTER HANDLING. KEEP AWAY FM HEAT.

Other Precautions:SHOULD BE HANDLED IN 316 STAINLESS STEEL GLASS, CERAMIC, OR SIMILAR CORROSION RESISTANT MATLS.

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

Respiratory Protection:IF TLV EXCEED-FULL FACEPIECE CHEM CART RESPIR;SUPPLIED AIR FULL FACEPIECE RESPIR OR AIRLINED HOOD Ventilation:LOCAL OR GENERAL EXHAUST. LOCAL EXHAUST PREFERRED

Protective Gloves: RUBBER OR NEOPRENE

Eye Protection: CHEM SAF GOGGLES OR FULL FACESHIELD

Other Protective Equipment: FULL PR

OTECTIVE CLOTHING, SAFETY SHOWER, EYE

WASH STATION

Supplemental Safety and Health

MSDS FM MFR DATED 01 NOV 85, CONFORMS TO OSHA HAZ COMM STD.

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

HCC:F6

Boiling Pt:=107.2C, 225.F Melt/Freeze Pt:=-12.2C, 10.F

Vapor Pres:40 Vapor Density:1.6 Spec Gravity:1.2

Evaporation Rate & Reference: 2.1 /BUTACET=1/

Solubility in Water: COMPLETE

Appearance and Odor:CLEAR, COLORLESS LIQUID; CHARACTERISTIC, PUNGENT ODOR

====== Stabil

Stability Indicator/Materials to Avoid:YES	
SULFURIC ACID, STRONG CAUSTICS, FURFURYL ALCOHOL, HYDROGEN F	EROXIDE,STRONG
OXIDIZERS & BASES.	

Stability Condition to Avoid:NOT GIVEN Hazardous Decomposition Products: CARBON MONOXIDE; CARBON DIOXIDE.

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

Waste Disposal Methods: CAN ATOMIZE IN SUITABLE RCRA APPROVED COMBUSTION CHEMBER OR SEND TO RCRA APPROVED DISPOSAL FACILITY. ENSURE COMPL

IANCE W/LOCAL, STATE & FED REGS.

ity and Reactivity Data =========

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particular situation.