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MSDS](#)

Common Name	MICROPOSIT 351 DEVELOPER
Manufactured by	SHIPLEY
CAS Number	1303-96-4
Revised	05/09/1997 (view older MSDS)
Source	Dolphin (DOL.161869)
1. Chemical Product and Company Identification 2. Composition/Information on the Ingredients 3. Hazard Identification 4. First Aid Measures 5. Fire Fighting Measures 6. Accidental Release Measures 7. Handling and Storage 8. Exposure Controls/Personal Protection 9. Physical and Chemical Properties 10. Stability and Reactivity 11. Toxicological Information 12. Ecological Information 13. Disposal Considerations 14. Transport Information 15. Regulatory Information 16. Other Information	

SHIPLEY

MATERIAL SAFETY DATA SHEET

MICROPOSIT 351

DEVELOPER

309002.00 US US

09.05.1997 MSDS US

-----1. **CHEMICAL PRODUCT AND COMPANY IDENTIFICATION** -----

PRODUCT CODE	30900
TRADE NAME	MICROPOSIT 351 DEVELOPER
MANUFACTURER/SUPPLIER	SHIPLEY COMPANY
ADDRESS	455 FOREST ST. MARLBOROUGH, MASSACHUSETTS 01752
PHONE NUMBER	(508) 481-7950
EMERGENCY PHONE NUMBER	(508) 481-7950
CHEMTREC #	(800) 424-9300
MSDS FIRST ISSUED	26 SEPTEMBER 1996

MSDS DATA REVISED 9 MAY 1997

PREPARED BY:
GREGORY S. DRIPPS

LOCAL SALES COMPANY SHIPLEY COMPANY, 455 FOREST STREET, MARLBORO, MA
01752 (508-481-7950)

-----2. COMPOSITION/INFORMATION ON THE INGREDIENTS -----

COMPONENTS IN PRODUCT

COMPONENT NAME	CAS# / CODES	CONCENTRATION
SODIUM HYDROXIDE	1310-73-2	1.00 - 5.00
WATER	7732-18-5	85.00 - 90.00
SODIUM TETRABORATE DECAHYDRATE	1303-96-4	5.00 - 10.00
INORGANIC BORATES		0.01 - 1.00

-----3. HAZARD IDENTIFICATION -----

MAIN HAZARDS

- CORROSIVE - SKIN - EYE

ROUTES OF ENTRY

INHALATION - SKIN CONTACT

CARCINOGENIC STATUS

NOT CONSIDERED CARCINOGENIC BY NTP, IARC AND OSHA

TARGET ORGANS - EYE - SKIN

HEALTH EFFECTS - EYES

LIQUID WILL CAUSE SEVERE CONJUNCTIVAL IRRITATION, CORNEAL DAMAGE, AND MAY RESULT IN LOSS OF VISION. VAPOR OR MIST WILL CAUSE SEVERE CONJUNCTIVAL IRRITATION AND CORNEAL DAMAGE.

HEALTH EFFECTS - SKIN

MATERIAL WILL CAUSE CHEMICAL BURNS. EFFECTS MAY BE DELAYED.

HEALTH EFFECTS - INGESTION

SWALLOWING MAY HAVE THE FOLLOWING EFFECTS:

- CORROSION OF MOUTH, THROAT AND DIGESTIVE TRACT

HEALTH EFFECTS - INHALATION

EXPOSURE TO VAPOR OR MIST MAY HAVE THE FOLLOWING EFFECTS: - SEVERE IRRITATION OF NOSE, THROAT AND RESPIRATORY TRACT EXPOSURE TO MIST AT HIGH CONCENTRATIONS MAY HAVE THE FOLLOWING EFFECTS: - SEVERE IRRITATION TO NOSE, THROAT AND RESPIRATORY TRACT AND POSSIBLY LUNG DAMAGE

-----4. FIRST AID MEASURES -----**FIRST AID - EYES**

IMMEDIATELY FLUSH THE EYE WITH PLENTY OF WATER FOR AT LEAST 20 MINUTES, HOLDING THE EYE OPEN. OBTAIN MEDICAL ATTENTION IMMEDIATELY.

FIRST AID - SKIN

IMMEDIATELY FLUSH THE SKIN WITH LARGE QUANTITIES OF WATER, PREFERABLY UNDER A SHOWER. REMOVE CONTAMINATED CLOTHING WHILE FLUSHING SKIN. CONTINUE WASHING FOR AT LEAST 15 MINUTES. CONTAMINATED CLOTHING SHOULD BE WASHED OR DRY-CLEANED BEFORE RE-USE. OBTAIN MEDICAL ATTENTION IMMEDIATELY

FIRST AID - INGESTION

DO NOT INDUCE VOMITING. WASH OUT MOUTH WITH WATER. OBTAIN
MEDICAL ATTENTION IMMEDIATELY

FIRST AID - INHALATION

REMOVE FROM EXPOSURE. IF THERE IS DIFFICULTY IN BREATHING, GIVE OXYGEN. OBTAIN MEDICAL ATTENTION IMMEDIATELY

ADVICE TO PHYSICIANS

TREAT SYMPTOMATICALLY. TREAT SKIN BURNS CONVENTIONALLY.

-----5. FIRE FIGHTING MEASURES -----**EXTINGUISHING MEDIA**

USE DRY CHEMICAL. USE WATER SPRAY, FOG OR ALCOHOL RESISTANT FOAM.

SPECIAL FIRE-FIGHTING PROCEDURES

NO SPECIFIC MEASURES NECESSARY.

UNUSUAL FIRE & EXPLOSION HAZARDS NONE KNOWN.

HAZARDS**PROTECTIVE EQUIPMENT FOR FIRE-**

WEAR FULL PROTECTIVE CLOTHING AND SELF-CONTAINED BREATHING

FIGHTING APPARATUS.

-----6. ACCIDENTAL RELEASE MEASURES -----**SPILL PROCEDURES**

SPILLS MAY BE ABSORBED WITH APPROPRIATE ABSORBENT MATERIAL FOR ALKALINE MATERIALS. TRANSFER INTO SUITABLE CONTAINERS FOR RECOVERY OR DISPOSAL.

PERSONAL PRECAUTIONS

WEAR APPROPRIATE PROTECTIVE CLOTHING. WEAR RESPIRATORY PROTECTION.
MATERIAL CAN CREATE SLIPPERY CONDITIONS UNDERFOOT.

ENVIRONMENTAL PRECAUTIONS

PREVENT THE MATERIAL FROM ENTERING DRAINS OR WATER COURSES. ADVISE AUTHORITIES IF SPILLAGE HAS ENTERED WATER COURSE OR SEWER OR HAS CONTAMINATED SOIL OR VEGETATION.

-----7. HANDLING AND STORAGE -----

HANDLING

USE LOCAL EXHAUST VENTILATION. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. EMERGENCY SHOWER AND EYE WASH FACILITIES SHOULD BE READILY AVAILABLE. AVOID INHALING VAPOR KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE.

STORAGE

STORE IN ORIGINAL CONTAINERS. STORAGE AREA SHOULD BE: - COOL - DRY - WELL VENTILATED - OUT OF DIRECT SUNLIGHT - AWAY FROM INCOMPATIBLE MATERIALS

OTHER

NONE KNOWN.

-----8. EXPOSURE CONTROLS/PERSONAL PROTECTION -----

OCCUPATIONAL EXPOSURE STANDARDS

SODIUM HYDROXIDE

OSHA: PEL 2 MG/M3 8H TWA. ACGIH: TLV 2MG/M3 CEILING LIMIT. UK EH40: OES 2MG/M3 15MIN TWA.

SODIUM TETRABORATE DECAHYDRATE

OSHA: PEL 10MG/M3 8H TWA. ACGIH: TLV 5MG/M3 8H TWA.

ENGINEERING CONTROL MEASURES

ENGINEERING METHODS TO PREVENT OR CONTROL EXPOSURE ARE PREFERRED. METHODS INCLUDE PROCESS OR PERSONNEL ENCLOSURE, MECHANICAL VENTILATION (LOCAL EXHAUST), AND CONTROL OF PROCESS CONDITIONS.

RESPIRATORY PROTECTION

RESPIRATORY PROTECTION IF THERE IS A RISK OF EXPOSURE TO HIGH VAPOR CONCENTRATIONS. THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON THE AIRBORNE CONCENTRATION FOUND IN THE WORKPLACE AND MUST NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR.

HAND PROTECTION

NEOPRENE GLOVES.

EYE PROTECTION

CHEMICAL GOGGLES AND FACE SHIELD

BODY PROTECTION

- RUBBER APRON

-----9. PHYSICAL AND CHEMICAL PROPERTIES -----

PHYSICAL STATE	LIQUID
COLOR	CLEAR
ODOR	ODORLESS
VOC (G/L)	0.0
SPECIFIC GRAVITY	1.084
PH	>13
BOILING RANGE/POINT (DEG. C/F)	129 / 289
FLASH POINT (PMCC) (DEG. C/F)	NOT APPLICABLE.
EXPLOSION LIMITS (%)	NOT APPLICABLE.
SOLUBILITY IN WATER	COMPLETELY SOLUBLE.
VAPOR DENSITY (AIR = 1)	NOT APPLICABLE.
EVAPORATION RATE	NOT APPLICABLE.
VAPOR PRESSURE	SODIUM HYDROXIDE: 6.3 MMHG AT 26 DEG. C. 18 MMHG AT 51 DEG. C.

-----10. STABILITY AND REACTIVITY -----

STABILITY

STABLE UNDER NORMAL CONDITIONS.

CONDITIONS TO AVOID

- CONTACT WITH INCOMPATIBLE MATERIALS

INCOMPATIBILITIES - ACIDS - ALDEHYDES - HYDROCARBON SOLVENTS - AROMATIC
HYDROCARBONS - REDUCING AGENTS

HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

HAZARDOUS DECOMPOSITION PRODUCTS NONE KNOWN.

-----11. TOXICOLOGICAL INFORMATION -----

ACUTE DATA

SODIUM HYDROXIDE: ORAL LD50 (RAT) 140-340 MG/KG. DERMAL LD50 (RABBIT) 2000
MG/KG.

CHRONIC/SUBCHRONIC DATA

NO RELEVANT STUDIES IDENTIFIED.

GENOTOXICITY

NO ADVERSE EFFECTS ARE EXPECTED.

REPRODUCTIVE/DEVELOPMENTAL TOXICITY

NO ADVERSE REPRODUCTIVE OR FETAL DEVELOPMENTAL EFFECTS ARE EXPECTED.

ADDITIONAL DATA

NONE.

-----12. ECOLOGICAL INFORMATION -----

MOBILITY

THE PRODUCT WILL DISSOLVE RAPIDLY IN WATER. THE PRODUCT IS INVOLATILE AND WATER SOLUBLE AND WILL PARTITION TO THE AQUEOUS PHASE.

PERSISTENCE/DEGRADABILITY

THE PRODUCT IS EXPECTED TO BE READILY BIODEGRADABLE.

BIO-ACCUMULATION

PRODUCT IS NOT EXPECTED TO BIOACCUMULATE.

ECOTOXICITY

SODIUM HYDROXIDE:

TESTS ON THE FOLLOWING SPECIES GAVE A TLM96 OF 125MG/LITRE: - MOSQUITO FISH

TESTS ON THE FOLLOWING SPECIES GAVE A TLM24 OF 76.6MG/LITRE: - BLUEGILLS

-----13. DISPOSAL CONSIDERATIONS -----

PRODUCT DISPOSAL

DISPOSE OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND NATIONAL REGULATIONS.

CONTAINER DISPOSAL

LABELS SHOULD NOT BE REMOVED FROM CONTAINERS UNTIL THEY HAVE BEEN CLEANED. EMPTY CONTAINERS MAY CONTAIN HAZARDOUS RESIDUES. DISPOSE OF CONTAINERS WITH CARE.

-----14. TRANSPORT INFORMATION -----

DOT GROUND:	SODIUM HYDROXIDE SOLUTION
UN PROPER SHIPPING NAME	SODIUM HYDROXIDE SOLUTION
UN CLASS	(8) CORROSIVE
UN NUMBER	UN1824
UN PACKAGING GROUP	II
N.O.S. 1:	NOT APPLICABLE.
N.O.S. 2:	NOT APPLICABLE.
SUBSIDIARY RISKS	NONE.
ADR/RID SUBSTANCE	CLASS 8 - 42(B)
IDENTIFICATION NUMBER	
CERCLA RQ	SODIUM HYDROXIDE (1000#)

MARINE POLLUTANT NONE.

-----15. REGULATORY INFORMATION -----

TSCA LISTED YES

TSCA EXEMPTIONS

WHMIS CLASSIFICATION E

MA RIGHT TO KNOW LAW

ALL COMPONENTS HAVE BEEN CHECKED FOR INCLUSION ON THE MASSACHUSETTS SUBSTANCE LIST (MSL). THOSE COMPONENTS PRESENT AT THE DE MINIMIS CONCENTRATION HAVE BEEN IDENTIFIED IN THE HAZARDOUS INGREDIENTS SECTION OF THE MSDS.

CALIFORNIA PROPOSITION 65

THIS PRODUCT DOES NOT CONTAIN MATERIALS WHICH THE STATE OF CALIFORNIA HAS FOUND TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

SARA TITLE III-SECTION 311/312 CATEGORIZATION (40 CFR 370)
IMMEDIATE, DELAYED HEALTH HAZARD

SARA TITLE III-SECTION 313 (40 CFR 372)
THIS PRODUCT DOES NOT CONTAIN A CHEMICAL WHICH IS LISTED IN SECTION 313 AT OR ABOVE DE MINIMIS CONCENTRATIONS

-----16. OTHER INFORMATION -----

NFPA RATING- FIRE 0
NFPA RATING- HEALTH 3
NFPA RATING- REACTIVITY 1
NFPA RATING- SPECIAL NONE.

REVISIONS HIGHLIGHTED COMPOSITION/INFORMATION ON THE COMPONENTS
MAIN HAZARDS
OCCUPATIONAL EXPOSURE STANDARDS

ABBREVIATIONS CAS#: CHEMICAL ABSTRACT SERVICES NUMBER
ACGIH: AMERICAN CONFERENCE OF GOVERNMENTAL
INDUSTRIAL HYGIENISTS
OSHA: OCCUPATIONAL SAFETY AND HEALTH
ADMINISTRATION

TLV: THRESHOLD LIMIT VALUE
PEL: PERMISSIBLE EXPOSURE LIMIT
STEL: SHORT TERM EXPOSURE LIMIT
NTP: NATIONAL TOXICOLOGY PROGRAM
IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
R: RISK
S: SAFETY
LD50: LETHAL DOSE 50%

LC50: LETHAL CONCENTRATION 50%
BOD: BIOLOGICAL OXYGEN DEMAND
KOC: SOIL ORGANIC CARBON PARTITION COEFFICIENT.
TLM: MEDIAN TOLERANCE LIMIT

DISCLAIMER

THE DATA CONTAINED HEREIN IS BASED ON INFORMATION THAT SHIPLEY COMPANY BELIEVES TO BE RELIABLE, BUT NO EXPRESSED OR IMPLIED WARRANTY IS MADE WITH REGARD TO THE ACCURACY OF SUCH DATA OR ITS SUITABILITY FOR A GIVEN SITUATION. SUCH DATA RELATES ONLY TO THE SPECIFIC PRODUCT DESCRIBED AND NOT TO SUCH PRODUCTS IN COMBINATION WITH ANY OTHER PRODUCT AND NO AGENT OF SHIPLEY COMPANY IS AUTHORIZED TO VARY ANY OF SUCH DATA. SHIPLEY COMPANY AND ITS AGENTS DISCLAIM ALL LIABILITY FOR ANY ACTION TAKEN OR FOREGONE ON RELIANCE UPON SUCH DATA.

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