**CLOVE OIL**

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MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC

CHEMICAL DIVISION

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SUBSTANCE IDENTIFICATION

SUBSTANCE: **CLOVE OIL**

CAS-NUMBER: 8000-34-8

TRADE NAMES/SYNONYMS:

CARYOPHYLLUS OIL, OIL OF CLOVES; O-55, AC05214

MOLECULAR FORMULA: VARIABLE

MOLECULAR WEIGHT: VARIABLE

CERCLA RATINGS (SCALE 0-3): HEALTH-2 FIRE-0 REACTIVITY-0 PERSISTENCE-0

NPFCA RATINGS (SCALE 0-4): HEALTH-2 FIRE-0 REACTIVITY-0

COMPONENT AND CONTAMINANTS

COMPONENT: EUGENOL PERCENT: 80

OTHER CONTAMINANTS: 20% UNKNOWN

EXPOSURE LIMITS:

INHALATIONAL EXPOSURE LIMITS ESTABLISHED BY OSHA, ACGIH, OR NIOSH.

PHYSICAL DATA

DESCRIPTION: COLORLESS TO PALE YELLOW LIQUID, BECOMING DARKER AND THICKER WITH AGE. BOILING POINT: 482° F (250° C) SPECIFIC GRAVITY: 1.0

EVAPORATION RATE: 1 (ETHANOL = 1) SOLUBILITY IN WATER: INSOLUBLE

SOLVENT SOLUBILITY: ALCOHOL, ETHER, SLIGHTLY IN GLACIAL ACETIC ACID

FLAMMABILITY

IGNITABLE: NO

FLASH POINT: NON-FIammable

FIREFIGHTING MEDIA:

DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR REGULAR FOAM (1990 EMERGENCY RESPONSE GUIDEBOOK, DOF P 5800.5).

FOR LARGER FIRES, USE WATER SPRAY, FOAM OR REGULAR FOAM (1990 EMERGENCY RESPONSE GUIDEBOOK, DOF P 5800.5).

FIREFIGHTING:

NO ACUTE HAZARD. MOVE CONTAINER FROM FIRE AREA IF POSSIBLE. AVOID BREATHING VAPORS OR DUSTS. KEEP UPWIND.

TOXICITY

CLOVE OIL:

2000 MG/KG ORAL-RAT LD50; 5000 MG/KG SKIN-RABBIT LD50; MUTATION DATA (RTEC), CARCINOGEN STATUS: NONE

CLOVE OIL IS AN EYE, SKIN, AND MUCOUS MEMBRANE IRRITANT. IT MAY AFFECT THE CENTRAL NERVOUS SYSTEM IF INGESTED OR INHALED. IT IS USED AS AN ANALGESIC, ANTIPLASMA, AND ANESTHETIC IN MEDICAL TREATMENT FOR EXTERNAL USE ONLY.

HEALTH EFFECTS AND FIRST AID

INHALATION: CLOVE OIL:

IRRITANT

ACUTE EXPOSURE - MAY CAUSE DIZZINESS, SHALLOW BREATHING, BRONCHIAL IRRITATION, RADAR HEART BEAT, UNCONSCIOUSNESS, AND CONVULSIONS. RECOVERY IS POSSIBLE. MAY BE COMPLICATED BY ANURA, PULMONARY EDEMA, OR BRONCHIAL PNEUMONIA.

CHRONIC EXPOSURE - MAY CAUSE MUCOUS MEMBRANE IRRITATION.

FIRST AID - REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. MAINTAIN AIRWAY AND BLOOD PRESSURE. ADMINISTER OXYGEN IF AVAILABLE. KEEP AFFEC TED PERSON WARM AND AT REST. TREAT SYMPTOMATICALLY AND SUPPORTIVELY. ADMINISTRATION OF OXYGEN SHOULD BE PERFORMED BY QUALIFIED PERSONNEL. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:

COLD CONTACT - IRRITANT

ACUTE EXPOSURE - MAY CAUSE IRRITATION.

CHRONIC EXPOSURE - REPEATED OR PROLONGED CONTACT MAY CAUSE DERMATITIS.

FIRST AID - REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AWASHED, IMMEDIATELY WITH MODERATELY DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:

CLOVE OIL:

ACUTE EXPOSURE - CONTACT MAY CAUSE REDNESS, PAIN, AND IRRITATION.

CHRONIC EXPOSURE - May CAUSE CONJUNCTIVITIS.

FIRST AID - WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER OR NORMAL SALINE, OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:

CLOVE OIL:

ACUTE EXPOSURE - MAY CAUSE ABDOMINAL BUMPING, Nausea, Vomiting, Diarrhea, GASTRITIS, SHALLOW RESPIRATION, PAINFUL OR BLOODY URINATION, UNCONSCIOUSNESS, AND CONVULSIONS. SEVERE POISNING MAY CAUSE RENAL DEGENERATIVE CHANGES, INTESTINAL CONGESTION AND EDEMA IN LUNGS, BRAIN, AND GASTRIC MUCOSA. MAY INDUCE ABORTION. MAY INDUCE ABORTION.

CHRONIC EXPOSURE - NO EFFECTS HAVE BEEN REPORTED IN HUMANS.

FIRST AID - REMOVE CHEMICAL By IP&CAP EMESIS OR GIVE MILK. OLIVE OIL OR VEGETABLE OIL FOLLOWED BY GASTRIC LAVAGE. ACTIVATED CHARCOAL IS ALSO USEFUL. FOLLOW WITH 60 MILLILITERS OF CASTOR OIL FOLLOWED BY 30-60 ML OF FLEET'S PHOSPHO-SODA DILUTED 1/4 IN WATER OR BY SALINE CATHARTIC MAINTAIN AIRWAY, RESPIRATION, AND BLOOD PRESSURE (DREISBACH, et al. KNOWN.

ANTIDOTE:

NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

REACTION:

STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

INCOMPATIBILITIES:

NONE KNOWN.

DECOMPOSITION:

NONE HAZARDOUS.

POLYMORPHIZATION:

HAZARDOUS POLYMORPHIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL TEMPERATURES AND PRESSURES.

CONDITIONS TO AVOID:

NONE REPORTED.

SPILL AND LEAK PROCEDURES:

OCCUPATIONAL SPILL:

NO UNSTABILIZED PRECAUTIONS INDICATED.

PROTECTIVE EQUIPMENT:

VENTILATION:

PROVIDE LOCAL EXHAUST OR GENERAL DILUTION VENTILATION SYSTEM.
RESPIRATOR
THE FOLLOWING RESPIRATORS ARE RECOMMENDED BASED ON INFORMATION FOUND IN THE
PHYSICAL DATA, TOXICITY AND HEALTH EFFECTS SECTIONS. THEY ARE RANKED IN
ORDER FROM MINIMUM TO MAXIMUM RESPIRATORY PROTECTION.
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND
IN THE WORKPLACE. MUST BE BASED ON THE SPECIFIC OPERATION. MUST NOT EXCEED
THE WORKING LIMITS OF THE RESPIRATOR AND MUST BE JOINTLY APPROVED BY THE
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY
AND HEALTH ADMINISTRATION (MSHA).

ANY TYPE C SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE OPERATED IN
PRESSURE-Demand OR OTHER POSITIVE PRESSURE MODE OR WITH A FULL FACEPIECE,
HELMET OR HOOD OPERATED IN CONTINUOUS-FLOW MODE.

ANY SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN
PRESSURE-Demand OR OTHER POSITIVE PRESSURE MODE.

CLOTHING:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE CLOTHING AND EQUIPMENT
TO PREVENT ANY POSSIBILITY OF SKIN CONTACT WITH THIS SUBSTANCE.

GLOVES:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS
SUBSTANCE.

EYE PROTECTION:
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES AND A
FACESHIELD TO PREVENT CONTACT WITH THIS SUBSTANCE.

EMERGENCY WASH FACILITIES:
WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES AND/OR SKIN MAY BE
EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH FOUNTAIN
AND QUICK DRENCH SHOWER WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

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