

CASEWAY INDUSTRIAL PRODUCTS, INC.
1050 GREEN PINE CIRCLE
ORANGE PARK, FL 32065
TEL: (904)214-9056 FAX: (904)375-2439
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EMERGENCY TELEPHONE NUMBER
CHEM-TEL: 1-800-255-3924

MATERIAL SAFETY DATA SHEET
SC 201

MSDS DATE: 06/09/06
SUPERCEDES: 07/04

SHIPPING INFORMATION:

PROPER SHIPPING NAME: TETRAHYDROFURAN
HAZARD CLASS OR DIVISION: 3 PACKING GROUP: II IDENTIFICATION NUMBER: UN2056
SHIPPING LABEL: FLAMMABLE LIQUID

COMPONENTS INFORMATION:

A. TETRAHYDROFURAN (THF)	CAS# 109-99-9	MAJOR
PEL (OSHA) 200 ppm, 590mg/m ³ , 8 hr. TWA		
TLV (ACGIH) 200 ppm 590mg/m ³ , 8 hr. TWA		
STEL 250 ppm, 737mg/m ³		

PHYSICAL DATA:

APPEARANCE: COLORLESS
BOILING POINT: 66°C (151°F) @ 760mmHg
SPECIFIC GRAVITY: 0.9
VAPOR PRESSURE: 160mmHg @ 20°C (77°F) 280 mmHg @ 38°C (100°F)
VAPOR DENSITY: 2.5 (AIR=1)
EVAPORATION RATE: .1 (BUTYL ACETATE=1)

ODOR: ETHEREAL (THRESHOLD=2-50ppm)
MELTING POINT: -108.5°C (163.3°F)
SOLUBILITY IN WATER: 100 WT%
PH: -7 (AQUEOUS SOLUTION)

FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: 20°C (-4°F) AUTOIGNITION: 321°C (610°F)
ACTUAL AIT'S CAN BE AFFECTED BY THE CONCENTRATION OF VAPORS AND OXYGEN, VAPOR/AIR CONTACT TIME, PRESSURE, VOLUME, CATALYTIC IMPURITIES, ETC. PROCESS CONDITIONS SHOULD BE ANALYZED TO DETERMINE IF THE AIT MIGHT BE HIGHER OR LOWER. THIS PRODUCT IS EXTREMELY FLAMMABLE. OSHA CLASS 1B FLAMMABLE LIQUID.

EXTINGUISHING MEDIA: USE ANSUL "PURPLE K" POTASSIUM BICARBONATE-BASE DRY CHEMICAL, NATIONAL "AER-O-FOAM", UNIVERSAL ALCOHOL RESISTANT FOAM.

FIRE FIGHTING PROCEDURES: EVACUATE AFFECTED AREA, STAY UP WIND AND AVOID SMOKE AND FUMES. USE WATER SPRAY TO COOL CONTAINERS. IF SMOKE AND FUMES CANNOT BE AVOIDED, WEAR SELF-CONTAINED BREATHING APPARATUS.

UNUSUAL HAZARDS: **DANGEROUS** WHEN EXPOSED TO HEAT OR FLAMES, EMITS TOXIC DECOMPOSITION PRODUCTS. CAN FORM EXPLOSIVE PEROXIDE COMPOUNDS AND CAN REACT WITH OXIDIZING

MATERIALS

TOXICOLOGICAL INFORMATION:

ANIMAL DATA: (THF) ORAL LD50 3.2mL/kg (2842)mg/kg IN RATS
INHALATION LC50 3HR 21,000ppm IN RATS TO

ANIMAL TESTING: INDICATES THAT (THF) IS A MODERATE SKIN IRRITANT, AND A SEVERE EYE IRRITANT. IT IS NOT A SKIN SENSITIZER IN ANIMALS. (THF) RAPIDLY PENETRATE THE SKIN OF RATS AND RABBITS RESULTING IN FATALITIES

INGESTION: CAUSED DECREASED FOOD AND WATER CONSUMPTION, AND BODY WEIGHT, AND INCREASES IN KIDNEY WEIGHTS. REPEATED EXPOSURES PRODUCE NO FUNCTIONAL OR PATHOLOGICAL CHANGES IN THE LIVER OR KIDNEYS OF ANIMALS THAT INGESTED APPROXIMATELY 888mg/kg/DAY

INHALATION: EXPOSURES OF ANIMALS TO 100-200ppm OF (THF) VAPORS CAUSED SLIGHT LOCAL IRRITATION OF THE EYES AND UPPER RESPIRATORY TRACT. EXPOSURES TO CONCENTRATIONS GREAT THAN 5000ppm RESULTED IN MARKED LOCAL IRRITATION SYMPTOMS, INCLUDING NASAL BLEEDING AND CORNEAL OPACITY, CLONIC MUSCLE SPASMS, ANESTHESIA AT NEAR LETHAL LEVELS, AND COMA. REPEATED EXPOSURE PRODUCED IRRITATIONS OF THE EYE, SKIN, AND RESPIRATORY SYSTEM AT CONCENTRATIONS OF APPROXIMATELY 100-400ppm. AT CONCENTRATIONS OF 3000ppm AND GREATER DAMAGE TO THE RESPIRATORY SYSTEM WAS OBSERVED.

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TOXICOLOGICAL INFORMATION CONTINUED

LIVER FUNCTION WAS AFFECTED IN ANIMALS EXPOSED TO 1000ppm. HIGHER DOSES CAUSED TRANSIENT SEDATION. CLINICAL CHEMISTRY AND HEMATOLOGICAL CHANGES. MICROSCOPIC AND FUNCTIONAL CHANGES OF THE LIVER, THICKENING OF THE LINING OF THE FORESTOMACH, AND MICROSCOPIC CHANGES OF THE ADRENAL CORTEX AND UTERUS HAVE ALSO BEEN REPORTED. SLIGHT DAMAGE TO THE UPPER RESPIRATORY TRACT OCCURRED IN RATS EXPOSED TO 200ppm FOR 12-24 WEEKS; SEVERE DAMAGE TO THE UPPER RESPIRATORY TRACT RESULTED FROM EXPOSURE TO 1000ppm FROM THE SAME STUDY. IN A DIFFERENT STUDY, CATS, RABBITS, AND DOGSEXPOSED TO 1000ppm FOR ONE YEAR DEMONSTRATED NO SIGHNS OF TOXICITY. WHEN COMPARED TO CONTROL ANIMALS, NO SIGNIFICANT DIFFERENCES WERE OBSERVED IN MICE EXPOSED

3000ppm

HEALTH HAZARD DATA:

INHALATION: VAPORS MAY CAUSE IRRITATION OF THE RESPIRATORY PASSAGES, POSSIBLY WITH COUGHIN AND DISCOMFORT, TEMPORARY NERVOUS SYSTEM DEPRESSION WITH ANESTHETIC EFFECTS SUCH AS DIZZINESS, HEADACHE, CONFUSION, INCOORDINATION, AND LOSS OF CONSCIOUSNESS; ABNORMAL LIVER FUNCTION AS DETECTED BY LABORATORY TEST; OR NONSPECIFIC DISCOMFORT, SUCH AS NAUSEA, HEADACHE, OR WEAKNESS.

FIRST AID: IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN.

SKIN: MAY CAUSE SKIN IRRITATION WITH DISCOMFORT OR RASH FROM CONTACT WITH THE LIQUID. EVIDENCE SUGGESTS THAT SKIN PERMEATION CAN OCCUR IN AMOUNTS CAPABLE OF PRODUCING THE EFFECTS OF SYSTEMIC TOXICITY.

FIRST AID: IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. CALL A PHYSICIAN. WASH CLOTHING BEFORE REUSE.

EYE: VAPORS MAY CAUSE EYE IRRITATION WITH TEARING, PAIN OR BLURRED VISION. CONTACT WITH THE LIQUID MAY CAUSE SEVERE IRRITATION OR BURNS. DAMAGE MAY BE PERMANENT.

FIRST AID: IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. CALL A PHYSICIAN.

FIRST AID IGESTION: IF SWALLOWED, DO NOT INDUCE VOMITING, IMMEDIATELY GIVE TO GLASSES OF WATER OR ACTIVATED CHARCOAL SLURRY. CALL A PHYSICIAN. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

NOTES: TO PREPARE ACTIVATED SLURRY, SUSPEND 50 GRAMS ACTIVATED CHARCOAL IN 400MI WATER IN PLASTIC BOTTLE AND SHAKE WELL. GIVE 5MI/KG of body weight, or 350 MI FOR AN AVERAGE ADULT.

INDIVIDUALS WITH PREEXISTING DISEASES OF THE LUNGS OR LIVER MAY HAVE INCREASED SUSCEPTIBILITY TO THE TOXICITY OF EXCESSIVE EXPOSURES.

REACTIVITY DATA:

STABILITY: STABLE

INCOMPATIBILITY: LITHUM ALUMINUM HYDIDE AND ALKALINE EARTH HYROXIDES

HAZARDOUS DECOMPOSITION/POLYMERIZATION: PEROXIDES, POLYMERIZATION: DOES NOT OCCUR.

CORROSIVE PROPERTIES: NOT CORROSIVE

OXIDIZER PROPERTIES: NOT AN OXIDIZER.

SPECIAL PROTECTION DATA:

RESPIRATORY PROTECTION: IF VAPORS OR MISTS ARE GENERATED, WEAR A NIOSH/MSHA APPROVED VAPOR/MIST RESPIRATOR OR AN AIR-SUPPLIED RESPIRATOR AS APPROPRIATE.

EYE PROTECTION: CHEMICAL GOGGLES; ALSO, WEAR A FACE SHIELD IF SPLASHING HAZARDS EXISTS.T

HAND PROTECTION: RUBBER GAUNTLET GLOVES.

CLOTHING: POLYVINYL ALCOHOL GLOVES, COVERALLS, APRONS, AND BOOTS AS NECESSARY TO PREVENT SKIN CONTACT.

VENTILATION: USE LOCAL EXHAUST TO CONTROL TO RECOMMENDED P.I..E.

EXPLOSION PROOFING: TOOLS SHOULD BE NON-SPARKLING. EXHAUST FANS SHOULD BE EXPLOSION PROOF.

OTHER PERSONAL PROTECTION: EYEWASH FOUNTAINS AND SAFETH SHOWERS MUST BE EASILY ACCESSIBLE. SHOWER AFTER HANDLING.

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SPILL OR LEAK HANDLING:

GENERAL: SPILLS SHOULD BE CONTAINED, SOLIDIFIED AND PLACE IN SUITABLE CONTAINERS FOR DISPOSAL IN A RCRA LICENSED FACILITY. THIS MATERIAL IS RCRA HAZARDOUS DUE TO ITS PROPERTIES.

WASTE DISPOSAL: INCINERATE OR BURY IN A RCRA LICENSED FACILITY. DO NOT DISCHARGE INTO WATERWAYS OR SEWER SYSTEMS WITHOUT PROPER AUTHORITY.

CONTAINER DISPOSAL: EMPTY CONTAINERS WITH LESS THAN 1 INCH OF RESIDUE MAY BE LANDFILLED AT A LICENSED FACILITY. RECOMMEND CRUSING OR OTHER MEANS TO PREVENT UNAUTHORIZED REUSE. OTHER CONTAINER MUST BE DISPOSED OF IN A RCRA LICENSED FACILITY.

STORAGE AND HANDLING:

GENERAL: AVOID EXPOSURE TO LIGHT, AIR AND ALL SOURCES OF IGNITION.

OTHER STORAGE AND HANDLING DATA: CONSULT OTHER SECTIONS OF MSDS FOR INFORMATION ON REACTIVITY AND FLAMMABILITY.

REGULATORY INFORMATION:

U.S. FEDERAL REGULATION

TSCA INVENTORY STATUS REPORTED/INCLUDED

TITLE III HAZARD CLASSIFICATION SECTIONS: 311 312

ACUTE YES CHRONIC NO FIRE YES REACTIVITY YES PRESSURE NO

LIST: SARA EXTREMELY HAZARDOUS SUBSTANCE NO CERCLA HAZARDOUS MATERIAL YES

SARA TOXIC CHEMICALS NO

CANADIAN REGULATIONS: CLASS D DIVISION 2 SUBDIVISION B – TOXIC MATERIAL. SKIN OR EYE IRRITANT
CLASS B DIVISION 2 – FLAMMABLE LIQUID

OTHER INFORMATION:

NFPA RATING: HEALTH 2 FLAMMABILITY 3 REACTIVITY 1

NPCA-HMIS RATING: HEALTH 3 FLAMMABILITY 3 REACTIVITY 1

STATEMENT

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. CASEWAY ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE TO VENDEES, USERS OR THIRD PARTIES CAUSED BY THE MATERIAL. SUCH VENDEES OR USERS ASSUME ALL RISKS ASSOCIATED WITH THE USE

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