

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
150 Allen Road Suite 302
Basking Ridge, New Jersey 07920
Information: 1-800-416-2505

Emergency Contact:
CHEMTREC 1-800-424-9300
Calls Originating Outside the US:
703-527-3887 (Collect Calls Accepted)

SUBSTANCE: BENZOIC ACID

TRADE NAMES/SYNONYMS:

BENZENECARBOXYLIC ACID; BENZENEMETHANOIC ACID; BENZENEFORMIC ACID;
BENZOATE; CARBOXYBENZENE; DRACYLIC ACID; PHENYL CARBOXYLIC ACID;
PHENYLCARBOXYLIC ACID; PHENYLFORMIC ACID; E 210; HA 1; HA 1(ACID); RETARDEX;
RETARDER BA; SOLVO POWDER; TENN-PLAS; C7H6O2; MAT02720; RTECS DG0875000

CHEMICAL FAMILY: aromatic, carboxylic acids

CREATION DATE: Jan 24 1989

REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: BENZOIC ACID
CAS NUMBER: 65-85-0
PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=1 REACTIVITY=0



EMERGENCY OVERVIEW:

COLOR: colorless to white

PHYSICAL FORM: crystals, powder

ODOR: faint odor, pleasant odor

MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation

PHYSICAL HAZARDS: Dust/air mixtures may ignite or explode.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation, sore throat

LONG TERM EXPOSURE: no information is available

SKIN CONTACT:

SHORT TERM EXPOSURE: irritation, rash

LONG TERM EXPOSURE: same as effects reported in short term exposure

EYE CONTACT:

SHORT TERM EXPOSURE: irritation (possibly severe)

LONG TERM EXPOSURE: same as effects reported in short term exposure

INGESTION:

SHORT TERM EXPOSURE: no information on significant adverse effects

LONG TERM EXPOSURE: no information on significant adverse effects

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Slight fire hazard. Dust/air mixtures may ignite or explode.

EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal.

FLASH POINT: 250 F (121 C)

LOWER FLAMMABLE LIMIT: >3 g/ft³

UPPER FLAMMABLE LIMIT: <35 g/ft³ (optimum)

AUTOIGNITION: 1060 F (571 C)

6. ACCIDENTAL RELEASE MEASURES

SOIL RELEASE:

Dig holding area such as lagoon, pond or pit for containment. Cover with plastic sheet or tarp to minimize spreading and protect from contact with water.

WATER RELEASE:

Absorb with activated carbon. Collect spilled material using mechanical equipment. Remove trapped material with suction hoses.

OCCUPATIONAL RELEASE:

Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Keep container tightly closed. Store in a cool, dry place. Store in a well-ventilated area. Protect from physical damage. Store with acids. Keep separated from incompatible substances.

HANDLING: Use methods to minimize dust.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

BENZOIC ACID:

No occupational exposure limits established.

VENTILATION: Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

PROTECTIVE MATERIAL TYPES: neoprene, rubber

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

Any air-purifying half-mask respirator equipped with organic vapor cartridge(s) in combination with an N95, R95, or P95 filter. The following filters may also be used: N99, R99, P99, N100, R100 or P100.

Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister having an N100, R100, or P100 filter.

Any powered, air-purifying respirator with a tight-fitting facepiece, organic vapor cartridge(s) and high-efficiency particulate filter(s).

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: solid

COLOR: colorless to white

PHYSICAL FORM: crystals, powder

ODOR: faint odor, pleasant odor

MOLECULAR WEIGHT: 122.12

MOLECULAR FORMULA: C₆-H₅-C-O₂-H

BOILING POINT: 480-482 F (249-250 C)

MELTING POINT: 250-253 F (121-123 C)

SUBLIMATION POINT: >=212 F (>=100 C)

VAPOR PRESSURE: 1 mmHg @ 96 C

VAPOR DENSITY (air=1): 4.2-4.21

SPECIFIC GRAVITY (water=1): 1.2659

WATER SOLUBILITY: 2.9% @ 20 C

PH: 2.8 @ 21 C (saturated solution)

VOLATILITY: Not applicable

ODOR THRESHOLD: Not available

EVAPORATION RATE: <1 (butyl acetate=1)

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:

Soluble: acetone, alcohol, benzene, carbon disulfide, carbon tetrachloride, chloroform, ethanol, ether, fixed & volatile oils, oil of turpentine

Slightly Soluble: petroleum ether, hexane

Insoluble: hexane, petroleum ether

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

INCOMPATIBILITIES: bases, metals, oxidizing materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: oxides of carbon, aromatic compounds, phenols

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

BENZOIC ACID:

IRRITATION DATA: 22 mg/3 day(s)-intermittent skin-human moderate; 0.25 percent/1 hour(s) open skin-human; 0.76 percent/40 minute(s) skin-human mild

TOXICITY DATA: 1700 mg/kg oral-rat LD50

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:

Moderately Toxic: ingestion

MUTAGENIC DATA: Available.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

FISH TOXICITY: 180000 ug/L 96 hour(s) LC50 (Mortality) Mosquitofish (*Gambusia affinis*)

INVERTEBRATE TOXICITY: 1000 mg/L 24 hour(s) EC100 (Abundance) Water flea (*Daphnia magna*)

ALGAL TOXICITY: >10000 ug/L 12-14 week(s) EC50 (Growth) Green algae (*Scenedesmus quadricauda*)

FATE AND TRANSPORT:

KOW: 3630.78 (log = 3.57) (estimated from water solubility)

KOC: 2432.20 (log = 3.39) (estimated from water solubility)

HENRY'S LAW CONSTANT: 5.5 E -6 atm-m³/mol

BIOCONCENTRATION: 1772 ug/L 24 day(s) BCF (Residue) Water flea (*Daphnia magna*) 1.78 ug/L

AQUATIC PROCESSES: 2.8666186 hours (River Model: 1 m deep, 1 m/s flow, 3 m/s wind)

ENVIRONMENTAL SUMMARY: Relatively non-persistent in the environment. Not expected to leach through the soil or the sediment. Accumulates very little in the bodies of living organisms. Slightly volatile from water.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Environmentally hazardous substances, solid, n.o.s. (BENZOIC ACID)

ID NUMBER: UN3077

HAZARD CLASS OR DIVISION: 9

PACKING GROUP: III

LABELING REQUIREMENTS: 9



CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Environmentally hazardous substance, solid, n.o.s.

UN NUMBER: UN3077

CLASS: 9

PACKING GROUP/CATEGORY: III

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

BENZOIC ACID: 5000 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):

ACUTE: Yes

CHRONIC: No

FIRE: No
REACTIVE: No
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29 CFR 1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: Not determined.

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDL): Not determined.

16. OTHER INFORMATION

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