

DATE: 03/26/98
INDEX: N/A

ACCT: 742982001
CAT NO: T185100

PO NBR: N/A

PAGE: 1

**** MATERIAL SAFETY DATA SHEET ****

Thymol
23475

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****
MSDS Name: Thymol
Catalog Numbers: 580226, T185 100, T185-100, T185100
Synonyms: Thymic Acid: 2-isopropyl-5-methylphenol; 3-Hydroxy-p-cymene; 6-isopropyl-m-cresol; 5-Methyl-2-(1-methylethyl)phenol; m-Thymol; 3-H
Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410
For information, call: 201-796-7000
Emergency Number: 201-796-7100
For CHEMREC assistance, call: 800-424-9300
For International CHEMREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
89-83-8	Thymol	100	201-944-8

Hazard Symbols: C
Risk Phrases: 22 34

**** SECTION 3 - HAZARDS IDENTIFICATION ****
EMERGENCY OVERVIEW
Appearance: colourless
Caution: May be harmful if swallowed. May cause reproductive effects based upon animal studies. May cause eye and skin irritation. May cause respiratory and digestive tract irritation.
Target Organs: None.
Potential Health Effects
Eye: May cause eye irritation.
Skin: May cause skin irritation.
Ingestion: May cause irritation of the digestive tract. May be harmful if swallowed.
Inhalation: May cause respiratory tract irritation.
Chronic: No information found.

**** SECTION 4 - FIRST AID MEASURES ****
Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid.
Skin: Get medical aid if irritation develops or persists. Flush skin with plenty of soap and water.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation: Remove from exposure to fresh air immediately. Get medical aid if cough or other symptoms appear.
Notes to Physician: Treat symptomatically and supportively.

**** SECTION 5 - FIRE FIGHTING MEASURES ****
General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.
Extinguishing Media:
Use water spray, dry chemical, carbon dioxide, or chemical foam.
Autoignition Temperature: Not available.
Flash Point: 216 deg F (102.22 deg C)
NFPA Rating: Not published.
Explosion Limits, Lower: Not available.
Upper: Not available.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

DATE: 03/26/98
INDEX: N/A

ACCT: 742982001
CAT NO: T185100

PO NBR: N/A

PAGE: 2

**** SECTION 7 - HANDLING AND STORAGE ****

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions. Provide ventilation.

Handling: Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.
Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****
Engineering Controls: Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Thymol	none listed	none listed	none listed

OSHA Vacated PELs:
Thymol:
No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134. Always use a NIOSH-approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****
Physical State: Solid
Appearance: colourless
Odor: pungent odor - weak odor
pH: Solution is neutral.
Vapor Pressure: 1 mm Hg
Vapor Density: Not available.
Evaporation Rate: Very volatile at 1000C
Viscosity: Not available.
Boiling Point: 232 deg C
Freezing/Melting Point: 49-51 deg C
Decomposition Temperature: Not available.
Solubility: Soluble
Specific Gravity/Density: 0.9681
Molecular Weight: 150.24

**** SECTION 10 - STABILITY AND REACTIVITY ****
Chemical Stability:
Stable under normal temperatures and pressures.
Conditions to Avoid:
Incompatible materials:
Incompatibilities with Other Materials:
Acetanilide, antipyrine, camphor, monobrominated camphor, chloral hydrate, menthol, quinine sulfate, salol, urethane, spirit nitrous ether.
Hazardous Decomposition Products:
Carbon monoxide, carbon dioxide
Hazardous Polymerization: Will not occur.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****
RTECS#:
CAS# 89-83-8: XP2275000
LD50/LC50:
CAS# 89-83-8: Oral, mouse: LD50 = 640 mg/kg; Oral, rat: LD50 = 980

DATE: 03/26/98
INDEX: N/A

ACCT: 742982001
CAT NO: T185100

PO NBR: N/A

PAGE: 3

DATE: 03/26/98
INDEX: N/A

ACCT: 742982001
CAT NO: T185100

PO NBR: N/A

Carcinogenicity:
Thymol is not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No data available.
Teratogenicity: No data available.
Reproductive Effects:
In studies to assess the reproductive effects of thymol, maternal effects have been observed when administered subcutaneously to a rat at a dose of 20 mg/kg.
Neurotoxicity: No data available.
Mutagenicity: Mutation data has been reported.
Other Studies: No data available.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Not available.
Environmental Fate:
Not available.
Physical/Chemical:
Not available.
Other:
Not available.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.
RCRA D-Series Maximum Concentration of Contaminants:
None listed.
RCRA D-Series Chronic Toxicity Reference Levels: None listed.
RCRA F-Series: None listed.
RCRA P-Series: None listed.
RCRA U-Series: None listed.
Not listed as a material banned from land disposal according to RCRA.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
IMO No information available.
IATA No information available.
RID/ADR No information available.
Canadian TDG No information available.

**** SECTION 15 - REGULATORY INFORMATION ****

US FEDERAL TSCA
CAS# 89-83-8 is listed on the TSCA inventory.
Health & Safety Reporting List:
Chemical Testing Rule:
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA
Section 302 (RQ)
None of the chemicals in this material have an RQ.
Section 302 (TPQ)
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 89-83-8: acute.
Section 313
None of the chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depleters.
This material does not contain any Class 2 Ozone depleters.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

DATE: 03/26/98
INDEX: N/A

ACCT: 742982001
CAT NO: T185100

PO NBR: N/A

PAGE: 4

DATE: 03/26/98
INDEX: N/A

ACCT: 742982001
CAT NO: T185100

PO NBR: N/A

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
Thymol is not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level:
None of the chemicals in this product are listed.
None of the chemicals in this product are listed.
European Labeling in Accordance with EC Directives
Hazard Symbols: C
Risk Phrases:
R 22 Harmful if swallowed.
R 34 Causes burns.
Safety Phrases:
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 28 After contact with skin, wash immediately with plenty of ... (to be specified by the manufacturer).
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

WGK (Water Danger/Protection)
Canada
CAS# 89-83-8: 2
CAS# 89-83-8 is listed on Canada's DSL/NDSL List.
This product has a WHMIS classification of D2B.
CAS# 89-83-8 is not listed on Canada's Ingredient Disclosure List.
Exposure Limits

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 4/05/1995 Revision #5 Date: 12/12/1997

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own determination as to the accuracy of the information for their particular purposes. In no way shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

TIN METAL

Material Safety Data Sheet

Mallinckrodt Chemical Inc.

P.O. Box 800

Paris, Kentucky 40362

Emergency Telephone Number

314-539-1600

Effective Date: 04-06-89 Supersedes 09-04-85

PRODUCT IDENTIFICATION:

Synonyms: Tin; tin flake; tin granular

Formula CAS No.: 7440-31-5

Molecular Weight: 118.71

Hazardous Ingredients: Tin, metal

Chemical Formula: Sn

PRECAUTIONARY MEASURES

CAUTION! MAY BE HARMFUL IF INHALED.

Avoid breathing dust.

Keep container closed.

Use with adequate ventilation.

EMERGENCY FIRST AID

If inhaled, remove to fresh air. Get medical attention for any breathing difficulty.

SEE SECTION 5.

Physical Data

SECTION 1

Appearance: Uniform, silvery granules or mossy flakes.

Odor: Odorless.

Solubility: Insoluble in water.

Boiling Point: 2507 C (4545 F).

Vapor Density (Air=1): No information found.

Melting Point: 231.9 C (449.4 F).

Vapor Pressure (mm Hg): 1 @ 1609 C (2928 F).

Density: 7.31

Evaporation Rate: No information found.

Fire and Explosion

SECTION 2

Information-----
Fire:

Autoignition temperature: 630 C (1166 F) dust cloud 430 C (806 F) dust layer

Explosion:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Minimum explosible concentration: 0.19 g/l Particle size and air concentration determine reactivity.

Fire Extinguishing Media:

Special powder or dry sand. Do not use water.

Special Information:

Use protective clothing and breathing equipment

appropriate for the surrounding fire.

Reactivity Data

SECTION 3

Stability:

Powder will oxidize, especially in the presence of moisture. Metal normally has a protective film of stannic oxide which thickens as the temperature is raised.

Hazardous Decomposition

Products:

No hazardous decomposition products.

Hazardous Polymerization:

This substance does not polymerize.

Incompatibilities:

Halogens and halogen trifluorides, sulfur, potassium peroxide, and some acids.

Leak/Spill Disposal Information

SECTION 4

Sweep, scoop or pick up spilled material. Package for reclamation or recovery. Package unreclaimable material for disposal in an approved waste disposal facility.

Ensure compliance with local, state and federal regulations.

Health Hazard Information

SECTION 5

A. Exposure/Health Effects-----
Inhalation:

No adverse effects expected but dust may cause mechanical irritation.

Ingestion:

Large doses may cause nausea, vomiting, and diarrhea.

Skin Contact:

No adverse effects expected.

Eye Contact:

No adverse effects expected but dust may cause mechanical irritation.

Chronic Exposure:

Prolonged inhalation of the dust or fume may result in a benign pneumoconiosis, producing distinctive changes in the lungs with no apparent disability or complications.

Aggravation of

Pre-existing Conditions:

No adverse health effects expected.

B. FIRST AID

Inhalation:

Not expected to require first aid measures.

Ingestion:

If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Never give anything by mouth to an unconscious person. Call physician immediately.

Skin Exposure:

Not expected to require first aid measures.

Eye Exposure:

Wash eyes with plenty of water for at least 15 minutes. If irritation develops, get medical attention.

C. TOXICITY

(RTECS, 1986)

No LD50/LC50 information found relating to normal routes of occupational exposure.

Occupational Control Measures

SECTION 6

Airborne Exposure Limits: -OSHA Permissible Exposure Limit (PEL): 2 mg/m3 (TWA) -ACGIH Threshold Limit Value (TLV): 2 mg/m3 (TWA)

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved) If the TLV is exceeded, a dust/mist respirator may be worn up to ten times the TLV. Consult respirator supplier for details.

Skin Protection: Wear protective gloves and clean body-covering clothing.

Eye Protection: Use chemical safety goggles. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

Storage and Special Information

SECTION 7

Keep in a tightly closed container. Store in a cool, dry, ventilated area away from sources of heat or ignition. Protect against physical damage. Avoid dust dispersal.

 Mallinckrodt provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT MAKES NO REPRESENTATIONS, OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR TO THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

 TINME

Addendum to Material Safety Data Sheet

REGULATORY STATUS

Hazard Categories for SARA
Section 311/312 Reporting

Acute	Chronic	Fire	Pressure	Reactive
-----	-----	-----	-----	-----
X	X			

Product or Components Product:	SARA EHS Sec. 302		SARA Sec. 313 Chemicals		CERCLA Sec. 103	RCRA Sec.
	RQ	TPQ	Name List	Chemical Category	RQ lbs	261.33
TIN METAL (7440-31-5)	No	No	No	No	No	No

SARA Section 302 EHS RQ:

Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPQ:

Threshold Planning Quantity of Extremely Hazardous substance. An asterisk (*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

SARA Section 313 Chemicals:

Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.

CERCLA Sec. 103:

Comprehensive Environmental Response, Compensation and Liability Act (Superfund) Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed at 40 CFR 302.4

RCRA:

Resource Conservation and Recovery Act. Commercial chemical product wastes designated as acute hazards and toxic under 40 CFR 261.33

TINME

TIN METAL

UREA
J.T.BAKER MSDS

TRANSPORTATION DATA AND ADDITIONAL INFORMATION (Cont.)

DEATH, ESPECIALLY IF IMPROPERLY HANDLED OR THE KNOWN DANGERS OF USE ARE NOT HEEDDED. READ ALL PRECAUTIONARY INFORMATION. AS NEW DOCUMENTED GENERAL SAFETY INFORMATION BECOMES AVAILABLE, BAKER WILL PERIODICALLY REVISE THIS MATERIAL SAFETY DATA SHEET.

NOTE: CHEMTREC, CANUTEC, AND NATIONAL RESPONSE CENTER EMERGENCY TELEPHONE NUMBERS ARE TO BE USED ONLY IN THE EVENT OF CHEMICAL EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT INVOLVING CHEMICALS. ALL NON-EMERGENCY QUESTIONS SHOULD BE DIRECTED TO CUSTOMER SERVICE (1-800-JTBAKER) ASSISTANCE.

COPYRIGHT 1995 J.T.BAKER INC.

* TRADEMARKS OF J.T.BAKER INC.

APPROVED BY QUALITY ASSURANCE DEPARTMENT.