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

Petroleum ether (EMD)
12787

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

MSDS Name: Petroleum ether (EMD)

Catalog Numbers:
E120 4, E1204, E139 1, E139 20, E139 200, E139 4, E139 500, E1391, E13920,
E139200, E1394, E139500, E139S 4, E139S4, E139SK 4, E139SK4, P480 4, P4804,
S76880-2, S768802

Synonyms:

Ligroine
Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300

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

CAS#	Chemical Name	%	EINECS#
8032-32-4	Ligroine	100	unlisted

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: Clear liquid. Flash Point: 0 F.
DANGER! EXTREMELY FLAMMABLE LIQUID. PROLONGED OR REPEATED CONTACT
MAY CAUSE DRY, CRACKED SKIN AND CAUSE IRRITATION. MAY CAUSE CENTRAL
NERVOUS SYSTEM DEPRESSION. MAY CAUSE LUNG DAMAGE. CAUSES EYE AND
SKIN IRRITATION. CAUSES DIGESTIVE AND RESPIRATORY TRACT IRRITATION.
Target Organs: Central nervous system.

Potential Health Effects

Eye:
Causes eye irritation.

Skin:
Prolonged and/or repeated contact may cause irritation and/or
dermatitis. Exposure may cause irritation characterized by redness,
dryness, and inflammation.

Ingestion:
Aspiration hazard. Causes gastrointestinal irritation with nausea,
vomiting and diarrhea. May cause central nervous system depression,
characterized by excitement, followed by headache, dizziness,
drowsiness, and nausea. Advanced stages may cause collapse,
unconsciousness, coma and possible death due to respiratory failure.

Inhalation:
Inhalation of high concentrations may cause central nervous system
effects characterized by headache, dizziness, unconsciousness and
coma. High vapor concentrations may cause drowsiness.

Chronic:
Prolonged or repeated skin contact may cause dermatitis.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Immediately 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. Immediately flush skin with plenty of soap and
water for at least 15 minutes while removing contaminated clothing
and shoes.

Ingestion:
Do NOT induce vomiting. Never give anything by mouth to an
unconscious person. Get medical aid immediately.

Inhalation:
Get medical aid immediately. Remove from exposure to fresh air
immediately. If not breathing, give artificial respiration. If
breathing is difficult, give oxygen.

Notes to Physician:
Treat symptomatically and supportively.
None reported.

**** 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. Extremely flammable liquid. Vapor may cause flash
fire.

Extinguishing Media:
Use foam, dry chemical, or carbon dioxide. Water may be ineffective.
This material is lighter than water and insoluble in water. The fire

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could easily be spread by the use of water in an area where the
water cannot be contained.
Autoignition Temperature: Not available.
Flash Point: 0 F (-17.78 C)
NFPA Rating: health-0; flammability-2; reactivity-0
Explosion Limits, Lower: Not available.
Upper: Not available.

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

General Information: Use proper personal protective equipment as indicated
in Section 8.

Spills/Leaks:
Absorb spill with inert material, (e.g., dry sand or earth), then
place into a chemical waste container. Remove all sources of
ignition. Use a spark-proof tool.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Use with adequate ventilation. Ground and bond containers when
transferring material. Avoid contact with eyes, skin, and clothing.
Empty containers retain product residue, (liquid and/or vapor), and
can be dangerous. Do not pressurize, cut, weld, braze, solder, drill,
grind, or expose such containers to heat, sparks or open flames.
Avoid contact with heat, sparks and flame. Avoid ingestion and
inhalation. Prevent build up of vapors to explosive concentration.

Storage:
Keep away from heat, sparks, and flame. Keep away from sources of
ignition. Store in a tightly closed container. Store in a cool, dry,
well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Use adequate general or local exhaust ventilation to keep airborne
concentrations below the permissible exposure limits.

Chemical Name	Exposure Limits		
	ACGIH	NIOSH	OSHA - Final PELs
Ligroine	300 ppm ; 1370 mg/m3	none listed	none listed

OSHA Vacated PELs:
Ligroine:
300 ppm TWA; 1350 mg/m3 TWA; 400 ppm STEL; 1800 mg/m3 STEL

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 gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin
exposure.

Respirators:
Follow the OSHA respirator regulations found in 29CFR
1010.134. Always use a NIOSH-approved respirator when
necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Liquid
Appearance: Clear liquid.
Odor: Mild gasoline like odor
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: 1
Viscosity: Not available.
Boiling Point: 35 C
Freezing/Melting Point: Not available.
Decomposition Temperature: Not available.
Solubility: Negligible in water
Specific Gravity/Density: Not available.
Molecular Formula: Not applicable.
Molecular Weight: 87

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable at room temperature in closed containers under normal storage
and handling conditions.

Conditions to Avoid:
Incompatible materials, ignition sources, excess heat.
Incompatibilities with Other Materials:
Oxygen and strong oxidizing agents
Hazardous Decomposition Products:
Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 8032-32-4: OI6180000
LD50/LC50:
CAS# 8032-32-4: Inhalation, rat: LC50 =3400 ppm/4H; Oral, mouse:
LD50 = 70170 mg/kg; Oral, rat: LD50 = 315 mg/kg.
Carcinogenicity:
Ligroine -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No data available.
Teratogenicity:
No data available.
Reproductive Effects:
No data available.
Neurotoxicity:
No data available.
Mutagenicity:
No data available.
Other Studies:
No data available.

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

Ecotoxicity:
Not available low potential to affect aquatic organisms, secondary
waste treatment microorganisms and the germination of some plants.
It has a moderate potential to affect the germination and growth of
some plants.
Environmental Fate:
Not available
Physical/Chemical:
No information found.
Other:
No information found.

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

Dispose of in a manner consistent with federal, state, and local regulations.
RCRA D-Series Maximum Concentration of Contaminants: Not listed.
RCRA D-Series Chronic Toxicity Reference Levels: Not listed.
RCRA F-Series: Not listed.
RCRA P-Series: Not listed.
RCRA U-Series: Not listed.
Not listed as a material banned from land disposal according to RCRA.

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

US DOT
Shipping Name: PETROLEUM SPIRIT
Hazard Class: 3
UN Number: UN1271
Packing Group: II
IMO
No information available.
IATA
No information available.
RID/ADR
No information available.
Canadian TDG
Shipping Name: PETROLEUM ETHER
Hazard Class: 3
UN Number: UN1271
Other Information: FLASHPOINT -40C

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

A. Federal
TSCA
CAS# 8032-32-4 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
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.
CERCLA/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 # 8032-32-4: acute, chronic, flammable.
Section 313
No 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.
OSHA:
None of the chemicals in this product are considered highly hazardous
by OSHA.
B. State
Ligroine can be found on the following state right to know lists: New
Jersey, Pennsylvania.
California No Significant Risk Level:
None of the chemicals in this product are listed.
C. International
Canada
CAS# 8032-32-4 is listed on Canada's DSL/NDSL List.
CAS# 8032-32-4 is listed on Canada's Ingredient Disclosure List.
European Labeling in Accordance with EC Directives
Hazard Symbols: Not available.
Risk Phrases:
Safety Phrases:
Exposure Limits:
OEL-AUSTRALIA:TWA 0.1 mg/m3. OEL-BELGIUM:TWA 0.1 mg/m3. OEL-DENMARK:TW
A 0.1 mg/m3. OEL-FINLAND:TWA 0.1 mg/m3;STEL 0.3 mg/m3. OEL-FRANCE:TWA
0.1 mg/m3. OEL-GERMANY:TWA 0.1 mg/m3. OEL-THE NETHERLANDS:TWA 0.1 mg/m
3. OEL-THE PHILIPPINES:TWA 0.1 mg/m3. OEL-SWEDEN:TWA 0.1 mg/m3. OEL-SW
ITZERLAND:TWA 0.1 mg/m3;STEL 0.5 mg/m3 JAN9. OEL-TURKEY:TWA 0.1 mg/m3
OEL-UNITED KINGDOM:TWA 0.1 mg/m3. OEL IN BULGARIA, COLOMBIA, JORDAN,
KOREA check ACGIH TLV. OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check AC
GI TLV

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

Additional Information:
Added NFPA codes to Section 5. Added SARA classifications to Section
15.
Section 3, Emer Overview, added "DANGER!...".
Section 3, Emer Overview, added "EXTREMELY FLAMMABLE LIQUID...".
Section 3, Emer Overview, added "PROLONGED OR REPEATED CONTACT MAY
C...".
Section 3, Emer Overview, added "CAUSES EYE AND SKIN
IRRITATION...".
Section 3, Emer Overview, added "CAUSES DIGESTIVE AND RESPIRATORY
TR...".
Section 3, Emer Overview, added "MAY CAUSE LUNG DAMAGE...".
Section 3, Emer Overview, added "MAY CAUSE CENTRAL NERVOUS SYSTEM
DE...".
Section 3, Eye Effects, added "Causes eye irritation...".
Section 3, Skin Effects, added "Exposure may cause irritation
chara...".
Section 3, Skin Effects, added "Prolonged and/or repeated contact
m...".
Section 3, Inhalation Effects, added "Inhalation of high
concentrations m...".
Section 3, Inhalation Effects, added "High vapor concentrations may
cause...".
Section 3, Ingestion Effects, added "Aspiration hazard...".
Section 3, Ingestion Effects, added "Causes gastrointestinal
irritation...".
Section 3, Ingestion Effects, added "May cause central nervous
system de...".
Section 3, Chronic Effects, added "Prolonged or repeated skin
contact...".
Section 4, Eye First Aid, added "Immediately flush eyes with
plenty...".
Section 4, Eye First Aid, added "Get medical aid...".
Section 4, Skin First Aid, added "Immediately flush skin with
plenty...".
Section 4, Skin First Aid, added "Get medical aid...".
Section 4, Inhalation First Aid, added "Remove from exposure to
fresh air i...".
Section 4, Inhalation First Aid, added "Get medical aid
immediately...".
Section 4, Inhalation First Aid, added "If not breathing, give
artificial r...".
Section 4, Inhalation First Aid, added "If breathing is difficult,

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give oxy.."
Section 4, Ingestion First Aid, added "Do NOT induce vomiting...".
Section 4, Ingestion First Aid, added "Get medical aid immediately...".
Section 4, Ingestion First Aid, added "Never give anything by mouth to an...".
Section 5, Extinguishing Media, added "Water may be ineffective...".
Section 5, Extinguishing Media, added "Use foam, dry chemical, or carbon d...".
Section 5, Extinguishing Media, added "This material is lighter than water...".
Section 5, General Firefighting, added "Extremely flammable liquid..".
Section 5, General Firefighting, added "As in any fire, wear a self-contains...".
Section 5, General Firefighting, added "Vapor may cause flash fire..".
Section 6, Spills/Leaks, added "Absorb spill with inert material, (...".
Section 6, Spills/Leaks, added "Remove all sources of ignition...".
Section 6, Spills/Leaks, added "Use a spark-proof tool...".
Section 7, Handling, added "Use with adequate ventilation...".
Section 7, Handling, added "Avoid contact with eyes, skin, and...".
Section 7, Handling, added "Avoid contact with heat, sparks and...".
Section 7, Handling, added "Avoid ingestion and inhalation...".
Section 7, Handling, added "Prevent build up of vapors to explo...".
Section 7, Handling, added "Ground and bond containers when tra...".
Section 7, Handling, added "Empty containers retain product res...".
Section 7, Storage, added "Store in a cool, dry, well-ventilat...".
Section 7, Storage, added "Keep away from heat, sparks, and fl...".
Section 7, Storage, added "Keep away from sources of ignition...".
Section 7, Storage, added "Store in a tightly closed container...".
Section 8, Engin. Controls, added "Use adequate general or local exha...".
Section 8, Eye Protection, added "Wear appropriate protective eyegla...".
Section 8, Skin Protection, added "Wear appropriate gloves to preven...".
Section 8, Clothing, added "Wear appropriate protective clothin...".
Section 8, Respirators, added "Follow the OSHA respirator regulati...".
Section 9, Physical Properties has changed.
Section 10, Stability, added "Stable at room temperature in close...".
Section 10, Condit. to Avoid, added "Incompatible materials...".
Section 10, Condit. to Avoid, added "ignition sources...".
Section 10, Condit. to Avoid, added "excess heat...".
Section 10, Decomposition Prod., added "carbon monoxide...".
Section 10, Decomposition Prod., added "carbon dioxide...".
Section 10, Incompatibilities has changed.
Section 11, Epidemiology has changed.
Section 11, Neurotoxicity has changed.
Section 11, Teratogenicity has changed.
Section 11, Mutagenicity has changed.
Section 11, Reproductive has changed.
Section 11, Other Info has changed.
Section 12, Ecology Info has changed.

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