

Section 1: Product & Company Information

Product Identifier: GeoChill+™ M-750, Geothermal Fluid

Other Means of Identification

Product Number: -

Recommended Use and Restrictions on Use

Recommended Use: Methanol based Geothermal Fluid w/ Inhibitors and Buffers
Restrictions on Use: No data available.

Manufacturer / Importer / Supplier / Distributor Information

Company Name: CORECHEM Inc.
Address: 4320 Greenway Drive
Knoxville, TN 37918
USA

Information Telephone Number: 1-865-524-4239

Fax Number: 1-865-524-3375

Website: www.corecheminc.com

Contact Person: Regulatory Manager

E-mail: regulatory@corecheminc.com

Emergency Phone Number: Chemtrec® 1-800-424-9300 / Outside USA 1-703-527-3887 (monitored 24 hours/day)

Section 2: Hazards Identification

GHS Hazard Classification(s)

In accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

Physical Hazard(s)

Flammable, Liquids - 2

Health Hazard(s)

Acute Toxicity, Oral - 3
Acute Toxicity, Dermal - 3
Acute Toxicity, Inhalation - 3
Corrosion/Irritation, Skin - 2
(Corrosion)Damage/Irritation, Eye - 2A
Toxic to Reproduction - 2
Specific Target Organ Toxicity (STOT), Single exposure - 1

Environmental Hazard(s)

Not classified.

Label Elements

Signal Word

DANGER

Hazard Symbol(s)



Hazard Statement(s)

H225: Highly flammable liquid and vapor
H301: Toxic if swallowed
H311: Toxic in contact with skin
H315: Causes skin Irritation
H319: Causes serious eye Irritation
H331: Toxic if inhaled
H361: Suspected of damaging fertility or the unborn child.
H370: Causes damage to organs

Precautionary Statements

Prevention

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting/equipment.

- P242: Use only non-sparking tools.
- P243: Take precautionary measures against static discharge.
- P260: Do not breathe dust/fume/gas/mist/vapors/spray.
- P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
- P264: Wash face, hands and any exposed skin thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P271: Use only outdoors or in a well-ventilated area.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P281: Use personal protective equipment as required.

Response

- P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
- P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304 + P340: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
- P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P307 + P311: IF exposed: Call a POISON CENTER or doctor/physician.
- P308 + P313: IF exposed or concerned: Get medical advice/attention.
- P311: Call a POISON CENTER or doctor/physician.
- P312: Call a POISON CENTER or doctor/physician if you feel unwell.
- P321: Specific treatment (see supplemental first aid instructions on this label).
- P322: Specific measures (see supplemental first aid instructions on this label).
- P330: Rinse mouth.
- P332 + P313: If skin irritation occurs: Get medical advice/attention.
- P337 + P313: If eye irritation persists: Get medical advice/attention.
- P361: Remove/Take off immediately all contaminated clothing.
- P362: Take off contaminated clothing and wash before reuse.
- P363: Wash contaminated clothing before reuse.
- P370 + P378: In case of fire: Use suitable extinguishing media for extinction.

Storage

- P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
- P403 + P235: Store in a well-ventilated place. Keep cool.
- P405: Store locked up.

Disposal

- P501 - Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC)

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Section 3: Composition/Information on Ingredients

Substances

Chemical Identity	Common Name/Synonym(s)	CAS #	Weight %	Impurity or Stabilizing Additive
Methyl Alcohol	Methanol	67-56-1	45-50%	No

Section 4: First-Aid Measures

General Information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Wash contaminated clothing before reuse.

Inhalation

Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen.

Skin Contact

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Eye Contact

Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Ingestion

Call a physician or poison control center immediately. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed

Symptoms

Toxic if inhaled. Toxic if swallowed. Toxic in contact with skin. Irritating to eyes, respiratory system and skin.

Indication of immediate medical attention and special treatment needed

Hazards

No data available.

Treatment

Treat symptomatically. Symptoms may be delayed.

Section 5: Fire-Fighting Measures

General Fire Hazards

Flammable liquid and vapor.

Suitable (and Unsuitable) Extinguishing Media

Suitable Extinguishing Media

Extinguishing powder, alcohol resistant foam, carbon dioxide, water fog

Unsuitable Extinguishing Media

Avoid water in straight hose stream; will scatter and spread fire.

Specific Hazards Arising from the Chemical

Can be ignited easily and burns vigorously. Vapor from the solvent may accumulate in container headspace resulting in flammability hazard. Fire may produce irritating, corrosive and/or toxic gases.

Special Protective Equipment and Precautions for Firefighters

Special Fire-Fighting Equipment Procedures

Water may be ineffective in fighting the fire. Use water spray to keep fire-exposed containers cool. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire.

Special Protective Equipment for Fire-Fighters

As in any fire, wear self-contained breathing apparatus pressure-demand (OSHA/NIOSH approved or equivalent) and full protective gear.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Evacuate spill area. Isolate hazard area and deny entry to unnecessary or unprotected personnel. Stay upwind and keep out of low area. Remove all possible sources of ignition in the surrounding area. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment. Ventilate contaminated area thoroughly shut off leaks if possible without personal risk.

Methods and Materials for Containment and Clean-Up

Eliminate all ignition sources if safe to do so. Use only non-sparking tools. All equipment used when handling the product must be grounded. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal

Notification Procedures

Notify authorities if any exposure to the general public or environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained.

Environmental Precautions

Use appropriate containment of product and firefighting water to avoid environmental contamination. Prevent from spreading or entering drains, ditches, or rivers by using sand, earth, or other appropriate barriers.

Section 7: Handling and Storage

Precautions for Safe Handling

DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharge. Use only non-sparking tools. Use personal protective equipment as required. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash hands thoroughly after handling. See Section 8 of the SDS for Personal Protective Equipment.

Conditions for Safe Storage, including any Incompatibilities

Keep away from food, drink and animal feeding stuffs. Keep out of reach of children. Keep container tightly closed in a cool, well-ventilated place. Store in a dry place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

Section 8: Exposure Controls/Personal Protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	CAS #	Type	Value	Source
Methyl Alcohol	67-56-1	TWA	200 ppm	US. ACGIH Threshold Limit Values
Methyl Alcohol	67-56-1	STEL	250 ppm	US. ACGIH Threshold Limit Values
Methyl Alcohol	67-56-1	PEL	200 ppm	US OSHA Table Z-1

Biological Limit Values

Chemical Identity	CAS #	Parameter	Value	Biological Specimen	Source
Methyl Alcohol	67-56-1	Methanol	15 mg/l	Urine	ACGIH – Biological Exposure Indices (BEI)
Remarks: Sampling time, end of shift					

Appropriate Engineering Controls

No data available.

Individual protection measures, such as personal protective equipment (PPE)

General Information

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Eye/Face Protection

Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

Skin Protection

Hand Protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory Protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Hygiene Measures

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Wash contaminated clothing before reuse.

Section 9: Physical and Chemical Properties

Appearance:

Physical State: Liquid
Color: Blue

Odor: Slight

Odor Threshold: No data available.

pH: 9.0 – 10.5

Melting Point/Freezing Point: -65°F

Initial Boiling Point and Boiling Range: 64°C (101.3 kPa) (as methanol)

Flash Point: 75°F (Closed Cup)

Evaporation Rate (butyl acetate=1): No data available.

Flammability (solid, gas): Class IB Flammable Liquid

Upper/Lower Limit on Flammability or Explosive Limits

Flammability Limit – Upper: 36% volume (as methanol)

Flammability Limit – Lower: 6% volume (as methanol)

Explosive Limit – Upper: No data available.

Explosive Limit – Lower: No data available.

Vapor Pressure: 16.9 kPa (25 °C) (as methanol)

Vapor Density (air = 1): 1.11 (as methanol)

Relative Density (water=1): .90 - .95

Solubility(ies):

Solubility in water: Miscible with water.

Solubility (other): No data available.

Partition coefficient (n-octanol/water): -0.77 (as methanol)

Auto-Ignition Temperature: 464 °C (as methanol)

Decomposition Temperature: No data available.

Viscosity: No data available.

Other Information:

Molecular Weight: Mixture

Formula: Mixture

Section 10: Stability and Reactivity

Reactivity

Contact with metals may evolve flammable hydrogen gas.

Chemical Stability

Material is stable under normal conditions.

Possibility of Hazardous Reactions

Hazardous polymerization does not occur.

Conditions to Avoid

Heat, sparks, flames. Sunlight.

Incompatible Materials

Oxidizing agents. Strong oxidizing agents. Acids.

Hazardous Decomposition Products

Thermal decomposition may release oxides of carbon. Formaldehyde. Toxic gas

Section 11: Toxicological Information

Information on routes of exposure

Ingestion: Toxic if swallowed.
Inhalation: Toxic if swallowed.
Skin Contact: Toxic if swallowed.
Eye Contact: Causes serious eye irritation.

Information on Toxicological Effects

Acute Toxicity (List all possible routes of exposure)

Oral

Methyl Alcohol: LD 50 (Rat): 5,628 mg/kg
Methyl Alcohol: LD 50 (Mouse): 7,300 mg/kg
Methyl Alcohol: LD 50 (Rabbit): 14,300 mg/kg

Dermal

Methyl Alcohol: LD 50 (Rabbit): 15,800 mg/kg

Inhalation

Methyl Alcohol: LC 50 (Rat, 1 h): > 145000 ppm
Methyl Alcohol: LC 50 (Rat, 4 h): 64000 ppm

Repeated Dose Toxicity

In serious cases absorption of methanol in the body may lead to damage to the eyesight.

Skin Corrosion/Irritation

Causes skin irritation.

Serious Eye Damage/Eye Irritation

Causes eye irritation.

Respiratory/Skin Sensitization

Not a skin sensitizer.

Carcinogenicity

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

US. National Toxicology Program (NTP) Report on Carcinogens

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Germ Cell Mutagenicity

In Vitro

No mutagenic components identified.

In Vivo

No mutagenic components identified.

Reproductive Toxicity

Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity – Single Exposure

Central nervous system. Eyes.

Specific Target Organ Toxicity – Repeated Exposure

None known.

Aspiration Hazard

No data available.

Other Effects

None known.

Section 12: Ecological Information

Ecotoxicity

Acute Hazards to the Aquatic Environment

Fish

Methyl Alcohol: LC 50 (Fathead minnow (Pimephales promelas), 96 h): > 100 mg/l

Aquatic Invertebrates

Methyl Alcohol: EC 50 (Water flea (Daphnia magna), 48 h): > 10,000 mg/l

Chronic Hazards to the Aquatic Environment

Fish

No data available.

Aquatic Invertebrates

No data available.

Toxicity to Aquatic Plants

No data available.

Persistence and Degradability

Biodegradation

Expected to be readily biodegradable.

BOD/COD Ratio

No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

May accumulate in soil and water systems.

Partition Coefficient n-octanol / water (log Kow)

Methyl Alcohol: Log Kow: -0.77

Mobility in Soil

No data available.

Other Adverse Effects

The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Section 13: Disposal Considerations

Disposal Instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Contaminated Packaging

Handle contaminated packages in the same way as the substance itself. Emptied containers may retain hazardous residue and explosive vapors. Keep away from heat, sparks, and flames. Do not cut, puncture, or weld on or near this container. Follow label warnings until container is thoroughly cleaned or destroyed.

Section 14: Transportation Information

US Department of Transportation (DOT)

UN Number: UN1993
UN Proper Shipping Name: Flammable liquids, n.o.s.
Technical Name: (contains Methanol)
Hazard Class: 3
Subsidiary Hazard Risk: -
Packing Group: II
DOT Label/Placard Exemptions: Not determined
Special Provisions: IB2, T7, TP1, TP8, TP28
Packaging Exceptions: 49CFR 173.150
Packaging Non-Bulk: 49CFR 173.202
Packaging Bulk: 49CFR 173.242
Reportable Quantity (RQ): 5000lb (2270kg)
Marine Pollutant: No
Poison Inhalation Hazard: No
Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Emergency Response Guidebook (ERG) #: 128

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

Section 15: Regulatory Information

US Federal Regulations

Toxic Substance Control Act (TSCA), Chemical Substance Inventory, Section 8(b)

This product or ingredients are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substance List (40 CFR 302.4)

The following components are subject to reporting levels established by CERCLA:

Methyl Alcohol (CAS# 67-56-1)

Clean Air Act (CAA), Section 112(r)

No chemicals in this material are subject to the reporting requirements of CAA.

Emergency Planning and Community Right-To-Know Act (EPCRA)

EPCRA 302 Extremely Hazardous Substance

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

EPCRA 304 Emergency Response Notification

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 304.

EPCRA 311/312 Emergency and Hazardous Materials Reporting

Fire Hazard: Yes
Sudden Release of Pressure: No
Reactive: No
Acute Health Hazard: Yes
Chronic Health Hazard: Yes

EPCRA 313 Toxic Chemical Release Inventory (TRI) Reporting

The following components are subject to reporting levels established by SARA Title III, Section 313:
Methyl Alcohol (CAS# 67-56-1)

US State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Important Note: Due to the changing nature of regulatory requirements, the information in this document should NOT be considered all-inclusive or authoritative. Users should make their own investigations to determine the suitability of the information for their particular purposes. International, Federal, State and Local regulations should be consulted to determine compliance with all required reporting requirements.

Section 16: Other Information

Hazardous Materials Identification System (HMIS®) Classification

Health Hazard: 1
Chronic Health Hazard: *
Flammability: 3
Physical Hazard: 0

(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

National Fire Protection Association (NFPA 704) Rating

Health Hazard: 1
Fire Hazard: 3
Reactivity Hazard: 0

Special: N/A

(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

Prepared by: Regulatory Manager
Version #: 001
Issue Date: April 25, 2016
Revision Date: -
Revisions: -

Key to Abbreviations and Acronyms

ATE - Acute Toxicity Estimate
BCF - Bioconcentration Factor
EC50 - Effective concentration, 50%
IDHL - Immediately Dangerous to Life and Health
Kg - Kilogram
l - Liter
lb - Pound
LC50 - Lethal Concentration, 50%
LD50 - Lethal Dose, 50%
mg - milligram
ml - milliliter
N/A - Not Applicable
N/D - Not Determined
PEL - Permissible Exposure Limit
REL - Recommended Exposure Limit
STEL - Short-term Exposure Limit
TWA - Time weighted average

ACGIH - American Conference of Industrial Hygienists
AIHA - American Industrial Hygiene Association
BEI - Biological Exposure Indices
CAS - Chemical Abstracts Service
DOT - US Department of Transportation
EPA - US Environmental Protection Agency
GHS - Globally Harmonized System of Classification and Labelling of Chemicals
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
IBC - Intermediate Bulk Container
IMDG - International Maritime Dangerous Goods
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - US Occupational Health and Safety Administration
SARA - US EPA Superfund Amendments and Reauthorization Act
TSCA - US EPA Toxic Substances Control Act
UN - United Nations

References

HSDB® - Hazardous Substances Data Bank

Disclaimer

The information in this SDS was obtained from sources which we believe are reliable. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS CORRECTNESS. The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.