

SILVER FERN CHEMICAL

Material Safety Data Sheet

HEXYLENE GLYCOL

SECTION 1: IDENTIFICATION

Product Name: Hexylene Glycol

CAS Number: 107-41-5

Chemical Name: Hexylene glycol

Synonyms: HG

Uses: Industrial solvent

Company

Silver Fern Chemical, Inc.
2226 Queen Anne Avenue North
Suite #C
Seattle WA 98109, USA

Business Contact

Customer Service: 206-282-3376
info@silverfernchemical.com

24 Hour Emergency Contact

Infotrac 800-535-5053
Outside USA & Canada 352-323-3500

SECTION 2: HAZARD IDENTIFICATION

Emergency Overview:

Appearance and Odour	: Clear. Liquid. Odourless.
Safety Hazards	: Combustible liquid. Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger.
Health Hazards	: Moderately irritating to eyes.

Health Hazards

Inhalation	: Slightly irritating to respiratory system.
Skin Contact	: May cause moderate irritation to skin.
Eye Contact	: Moderately irritating to eyes.



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- Signs and Symptoms** : Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance.
- Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin. Eyes.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration
Hexylene Glycol	107-41-5	100.00%

SECTION 4: FIRST AID MEASURES

- General Information** : In general no treatment is necessary, however, obtain medical advice.
- Inhalation** : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
- Skin Contact** : Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.
- Eye Contact** : Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.
- Ingestion** : If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.



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SECTION 5: FIRE FIGHTING MEASURES

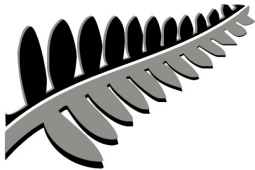
Clear fire area of all non-emergency personnel.

Flash point	: 93.34 °C / 200.01 °F
Explosion / Flammability limits in air	: 1 - 9.9 %(V)
Auto ignition temperature	: 425 °C / 797 °F (ASTM E-659)
Specific Hazards	: Carbon monoxide may be evolved if incomplete combustion occurs. The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Extinguishing Media	: Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Do not discharge extinguishing waters into the aquatic environment.
Protective Equipment for Firefighters	: Wear full protective clothing and self-contained breathing apparatus.
Additional Advice	: Keep adjacent containers cool by spraying with water.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Observe all relevant local and international regulations.

Protective measures	: Avoid contact with spilled or released material. Immediately remove all contaminated clothing. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet. Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment (of product and fire fighting water) to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other
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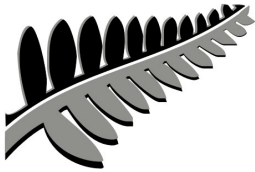
HEXYLENE GLYCOL

appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas indicator.

- Clean Up Methods** : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
- Additional Advice** : See Chapter 13 for information on disposal. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.

SECTION 7: HANDLING AND STORAGE

- General Precautions** : Avoid breathing of or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 10 m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations. Handling Temperature: Ambient.
- Storage** : Must be stored in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Storage Temperature: 30 °C / 86 °F maximum.



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- Product Transfer** : Keep containers closed when not in use. Do not use compressed air for filling, discharging or handling.
- Recommended Materials** : For container paints, use epoxy paint, zinc silicate paint. For containers, or container linings use mild steel, stainless steel.
- Unsuitable Materials** : Most plastics.
- Container Advice** : Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

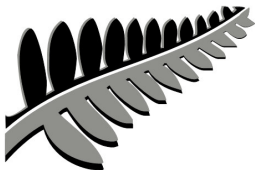
Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Hexylene Glycol	ACGIH	Ceiling	25 ppm		
	OSHA Z1A	Ceiling	25 ppm	125 mg/m3	

- Additional Information** : Shell has adopted as Interim Standards, the OSHA PELs that were established in 1989 and later rescinded.
Wash hands before eating, drinking, smoking and using the toilet.

- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Eye washes and showers for emergency use.

- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

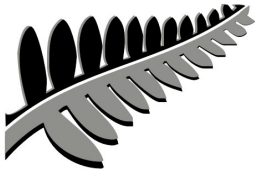


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- Respiratory Protection** : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for organic gases and vapours [boiling point >65 °C (149 °F)] meeting EN141. Where air-filtering respirators are unsuitable (e.g., airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
- Hand Protection** : Longer term protection: Butyl rubber. Incidental contact/Splash protection: PVC. Neoprene rubber. Nitrile rubber. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.
- Eye Protection** : Chemical splash goggles (chemical monogoggles).
- Protective Clothing** : Use protective clothing which is chemical resistant to this material. Safety shoes and boots should also be chemical resistant.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Examples of sources of recommended air monitoring methods are given below or contact supplier. Further national methods may be available. National Institute of Occupational Safety and Health (NIOSH), USA: Manual of analytical Methods <http://www.cdc.gov/niosh/nmam/nmammenu.html> Occupational
- Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha-slc.gov/dts/sltc/methods/toc.html> Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hsl.gov.uk/search.htm>
- Environmental Exposure Controls** : Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.



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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Clear. Liquid.
Odour	: Odourless.
Boiling point	: 195 - 200 °C / 383 - 392 °F
Flash point	: 93.34 °C / 200.01 °F
Explosion / Flammability limits in air	: 1 - 9.9 %(V)
Auto-ignition temperature	: 425 °C / 797 °F (ASTM E-659)
Vapour pressure	: 3 Pa at 20 °C / 68 °F
Specific gravity	: 0.92 at 20 °C / 68 °F
Water solubility	: at 20 °C / 68 °F Completely miscible.
Vapour density (air=1)	: 4
Volatile organic carbon content	: 100 %
Evaporation rate (nBuAc=1)	: 0.01 (ASTM D 3539, nBuAc=1)

SECTION 10: STABILITY AND REACTIVITY

Stability	: Stable under normal conditions of use. Reacts with strong oxidising agents. Reacts with strong acids.
Conditions to Avoid	: Avoid heat, sparks, open flames and other ignition sources.
Materials to Avoid	: Strong oxidising agents. Strong acids.
Hazardous Decomposition Products	: Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11: TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on product testing.
Acute Oral Toxicity	: Low toxicity: LD50 >2000 mg/kg , Rat
Acute Dermal Toxicity	: Low toxicity: LD50 >2000 mg/kg , Rabbit



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Acute Inhalation Toxicity	:	Low toxicity: LC50 greater than near-saturated vapour concentration. / 1 hours, Rat
Skin Irritation	:	May cause moderate irritation to skin.
Eye Irritation	:	Moderately irritating to eyes.
Respiratory Irritation	:	Repeated inhalation of vapours and mists is expected to cause irritation of the respiratory tract.
Sensitisation	:	Not a skin sensitiser.
Repeated Dose Toxicity	:	Liver: caused increased liver size in animals which is believed to be an adaptive, not a toxic, effect. Kidney: caused kidney effects in male rats which are not considered relevant to humans
Mutagenicity	:	No evidence of mutagenic activity.
Reproductive and Developmental Toxicity	:	Causes foetotoxicity in animals at doses which are maternally toxic.

SECTION 12: ECOLOGICAL INFORMATION

Acute Toxicity

Fish	:	Low toxicity: LC/EC/IC50 > 1000 mg/l
Aquatic Invertebrates	:	Low toxicity: LC/EC/IC50 > 1000 mg/l
Microorganisms	:	Low toxicity: LC/EC/IC50 > 1000 mg/l

Mobility : If product enters soil, it will be highly mobile and may contaminate groundwater.

Dissolves in water.

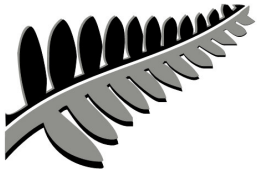
Persistence/degradability : Readily biodegradable.

Oxidises rapidly by photo-chemical reactions in air.

Bioaccumulation : Not expected to bioaccumulate significantly.

SECTION 13: DISPOSAL CONSIDERATIONS

Material Disposal : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.



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Container Disposal : Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums. Send to drum recoverer or metal reclaimer.

Local Legislation : Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

SECTION 14: TRANSPORT INFORMATION

US Department of Transportation Classification (49CFR)

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

IMDG

This material is not classified as dangerous under IMDG regulations.

IATA (Country variations may apply)

This material is not classified as dangerous under IATA regulations.

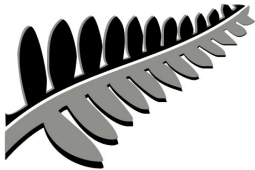
This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Federal Regulatory Status / Notification Status

AICS	Listed.
DSL	Listed.
INV (CN)	Listed.
ENCS (JP)	Listed. (2)-240
TSCA	Listed.
EINECS	Listed. 203-489-0
KECI (KR)	Listed. KE-24702
PICCS (PH)	Listed.



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SARA Hazard Categories (311/312)

Immediate (Acute) Health Hazard. Fire Hazard.

State Regulatory Status

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

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

New Jersey Right-To-Know Chemical List

Hexylene Glycol (107-41-5) 100.00% Listed.

Pennsylvania Right-To-Know Chemical List

Hexylene Glycol (107-41-5) 100.00% Listed.

SECTION 16: OTHER INFORMATION

HMIS Rating (Health, Fire, Reactivity) : 2, 1, 0

NFPA Rating (Health, Fire, Reactivity) : 1, 1, 0

DISCLAIMER OF RESPONSIBILITY

The information on this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. 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 handling, storage, use, or disposal of this product. If the product is used as a component in another product, this MSDS information may not be applicable.

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