

AES VERT MUD SYSTEM

SECTION 1. IDENTIFICATION

Product Identifier	AES VERT MUD SYSTEM
Other Means of Identification	Diesel Based Invert Emulsion Drilling Fluid
Recommended Use	Drilling Fluid.
Manufacturer / Supplier	AES Drilling Fluids, LLC, 11767 Katy Freeway, Suite 230, Houston, TX, 77079, Sales & Information, 281-556-5628
Emergency Phone No.	CHEMTREC, 1-800-424-9300, 24-hour Emergency
Date of Preparation	July 01, 2015

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquid - Category 4; Acute toxicity (Oral) - Category 5; Acute toxicity (Dermal) - Category 5; Acute toxicity (Inhalation) - Category 5; Skin corrosion/irritation - Category 2; Serious eye damage/eye irritation - Category 2B; Carcinogenicity - Category 2; Specific target organ toxicity (repeated exposure) - Category 2; Aspiration hazard - Category 2

GHS Label Elements



Signal Word:

Warning

Hazard Statement(s):

H227	Combustible liquid.
H305	May be harmful if swallowed and enters airways.
H315	Causes skin irritation.
H320	Causes eye irritation.
H333	May be harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H351	Suspected of causing cancer.

Precautionary Statement(s):

Prevention:

P210	Keep away from flames and hot surfaces. – No smoking.
P262	Do not get in eyes, on skin, or on clothing.
P260	Do not breathe mist, vapours, spray.
P264	Wash hands and skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTRE/doctor/
P302 + P352	IF ON SKIN: Wash with plenty of water.
P332 + P313	If skin irritation occurs: Get medical advice/attention.

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P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical advice/attention.

P304 + P341 IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

P304 + P312 IF INHALED: Call a POISON CENTRE/doctor if you feel unwell.

P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Fuels, diesel, No. 2	68476-34-6	50-90	
Barite	7727-43-7	5-65	
Calcium chloride	10043-52-4	2-15	
Silica, quartz	14808-60-7	0.5-6	
Paraffins (petroleum)	64771-72-8	0.5-6	
Quaternary ammonium compounds	68953-58-2	0.5-6	
Calcium hydroxide	1305-62-0	0.5-5	
Gilsonite	12002-43-6	0.5-5	

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor if you feel unwell or are concerned.

Skin Contact

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 5 minutes. If skin irritation occurs get medical advice/attention. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Remove contact lenses, if present and easy to do. If eye irritation persists, get medical advice/attention.

Ingestion

Rinse mouth with water. Do not induce vomiting without medical advice. If vomiting occurs, have victim lean forward to reduce the risk of aspiration. Immediately call a Poison Centre or doctor.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon Dioxide, Foam, Dry chemical. Water spray or fog, do not use a direct stream as this may spread the fire.

Specific Hazards Arising from the Chemical

Closed containers may rupture violently when heated releasing contents.

Oxides of carbon.

Special Protective Equipment and Precautions for Fire-fighters

Use water spray to cool containers/tanks.

When fighting chemical fires, emergency responders should wear NIOSH approved self contained breathing apparatus and appropriate protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Keep out unnecessary and unprotected personnel. Use the personal protective equipment recommended in Section 8 of this safety data sheet.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway. Prevent product from entering drains, soil, ditches, sewers, waterways and/or groundwater.

Methods and Materials for Containment and Cleaning Up

Small spills or leaks: do not use absorbents. Contain spill using noncombustible material such as vermiculite, earth or sand. Large spills or leaks: eliminate all ignition sources. Dike spilled product to prevent runoff. Remove or recover liquid using pumps or vacuum equipment. Contain and soak up spill using noncombustible material such as vermiculite, earth or sand. Place contaminated vermiculite, earth or sand into suitable, covered, labelled containers for disposal. Clean up residual with absorbent material, place in appropriate containers and flush with water. Store recovered product or absorbent material in suitable containers for disposal according to local regulations.

Other Information

Contact EH&S regarding spill as spills of certain products and certain quantities may require reporting to various authorities.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Do not breathe in this product. Do not get in eyes, on skin or on clothing. Only use where there is adequate ventilation. Avoid generating vapours or mists. Keep away from excessive heat, oxidizing agents, and ignition sources. Do not eat, drink or smoke in areas where product is handled. Employees should wash hands after working with product and before going on breaks outside of the work area. Wear personal protective equipment to avoid direct contact with this chemical. See Section 8 for appropriate Personal Protective Equipment (PPE).

Conditions for Safe Storage

Store in an area that is: well-ventilated, cool, dry. Separate from incompatible materials away from open flames, excessive heat or sources of ignition. Keep containers tightly closed when not in use.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH® TLV®		OSHA PEL		AIHA® WEEL™	
	TWA	STEL [C]	TWA	Ceiling	8-hr TWA	Short-term TWA [C]
Calcium chloride	Not established		Not established		Not established	
Calcium hydroxide	5 mg/m3		5 mg/m3		Not established	
Barite	5.0 mg/m3 (I)		5.0 mg/m3 (R)		5.0 mg/m3 (R)	
Gilsonite	3 mg/m3 (R)	Not established	5 mg/m3 (R)	Not established	Not established	Not established
Silica, quartz	0.025 mg/m3 A2		0.1 mg/m3		Not established	
Paraffins (petroleum)	Not established		Not established		Not established	
Quaternary ammonium compounds	Not established		Not established		Not established	
Fuels, diesel, No. 2	100 mg/m3 Skin		Not established		Not established	

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ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value. TWA = Time-Weighted Average. STEL = Short-term Exposure Limit. C = Ceiling limit. OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. AIHA® = AIHA® Guideline Foundation. WEEL™ = Workplace Environmental Exposure Limit.

Appropriate Engineering Controls

Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air. A suitable eyewash station should be within acceptable distance to the work area.

Individual Protection Measures

Eye/Face Protection

Safety glasses or goggles. Use chemical goggles or a face shield if product could be splashed.

Skin Protection

Wear gloves with appropriate chemical resistance, see manufacturers specifications for suitability. Wear long sleeves, long pants and appropriate footwear while working with product.

Respiratory Protection

If conditions exist above the OEL wear a NIOSH approved respirator with an appropriate cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Dark brown - grey liquid.
Odour	Not available
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	Not available (melting); Not available (freezing)
Initial Boiling Point/Range	Not available
Flash Point	> 170 °F (77 °C)
Evaporation Rate	Not available
Flammability (solid, gas)	Not available
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	Not available
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	Not available
Solubility	Insoluble in water
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Other Information	
Physical State	Liquid

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

Conditions to Avoid

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Open flames, sparks, static discharge, heat and other ignition sources.

Incompatible Materials

Strong Oxidizing Agents.

Hazardous Decomposition Products

Carbon oxides.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Calcium chloride	> 160 mg/m ³ (4-hour exposure)	1000 mg/kg	> 5000 mg/kg
Calcium hydroxide	Not available	7300 mg/kg (mouse)	Not available
Barite	Not available	Not available	Not available
Gilsonite	Not available	Not available	Not available
Silica, quartz	Not available	500 mg/kg (rat)	Not available
Paraffins (petroleum)	Not available	Not available	Not available
Quaternary ammonium compounds	Not available	Not available	Not available
Fuels, diesel, No. 2	Not available	Not available	Not available

Skin Corrosion/Irritation

May cause mild skin irritation.

Serious Eye Damage/Irritation

May cause mild eye irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

May cause irritation of the respiratory tract. Prolonged or repeated exposure may cause depression of the central nervous system. Symptoms may include headache, nausea, dizziness, drowsiness and confusion.

Ingestion

May cause irritation of the mouth, throat and stomach.

Aspiration Hazard

Liquid may be aspirated into the lungs during ingestion or vomiting resulting in lung injury.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Prolonged exposures to high vapour concentrations can cause headache, dizziness, nausea, blurred vision and depression of central nervous system. Prolonged skin contact may aggravate existing skin conditions such as dermatitis. May cause damage to kidneys. Prolonged skin contact may aggravate existing skin conditions such as dermatitis.

Respiratory and/or Skin Sensitization

Not known to be a skin sensitizer. Not known to be a respiratory sensitizer.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Calcium chloride	Not Listed	Not Listed	Not Listed	Not Listed
Calcium hydroxide	Not Listed	Not Listed	Not Listed	Not Listed
Barite	Not Listed	Not Listed	Not Listed	Not Listed
Gilsonite	Not Listed	Not Listed	Not Listed	Not Listed

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Silica, quartz	Group 1	A2	Known carcinogen	Not Listed
Paraffins (petroleum)	Not Listed	Not Listed	Not Listed	Not Listed
Quaternary ammonium compounds	Not Listed	Not Listed	Not Listed	Not Listed
Fuels, diesel, No. 2	Group 3	A3	Not Listed	Not Listed

May cause cancer based on animal studies.

Key to Abbreviations

IARC = International Agency for Research on Cancer. Group 1 = Carcinogenic to humans. Group 3 = Not classifiable as to its carcinogenicity to humans. ACGIH® = American Conference of Governmental Industrial Hygienists. A2 = Suspected human carcinogen. A3 = Animal carcinogen. NTP = National Toxicology Program. OSHA = US Occupational Safety and Health Administration.

Reproductive Toxicity

Development of Offspring

No information was located.

Sexual Function and Fertility

No information was located.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

Do not allow product to contaminate domestic or irrigation water supplies, lakes, streams, ponds or rivers.

Toxicity

No information was located.

Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Calcium chloride	8.35 mg/L (Lepomis macrochirus (bluegill); fresh water; static)	.573 mg/L (Daphnia magna (water flea); fresh water; static)	Not available	Not available
Calcium hydroxide	Not available	Not available	Not available	Not available
Barite	Not available	32 mg/L (Daphnia magna (water flea); 48-hour; fresh water; static)	Not available	Not available
Gilsonite	Not available	Not available	Not available	Not available
Silica, quartz	Not available	Not available	Not available	Not available
Paraffins (petroleum)	Not available	Not available	Not available	Not available
Quaternary ammonium compounds	Not available	Not available	Not available	Not available
Fuels, diesel, No. 2	Not available	Not available	Not available	Not available

Persistence and Degradability

No information was located.

Bioaccumulative Potential

No information was located.

Mobility in Soil

No information was located.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of in accordance with all local, state and federal regulations. Not classified as RCRA Hazardous. RCRA WASTE NUMBER: Not Applicable.

SECTION 14. TRANSPORT INFORMATION

Not regulated under US DOT Regulations.

Other Information This material does not sustain combustion when tested by ASTM-4206 and therefore meets the 49 CFR 173.120(b)(3) exemption from DOT hazmat shipping requirements.

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are on the TSCA Inventory or exempt from the TSCA.

Additional USA Regulatory Lists

CERCLA: Product does not contain any chemicals subject to the reporting requirement of CERCLA.

SARA Title III - Section 302: No listed components.

SARA Title III - Section 311/312: Fire Hazard Immediate Health Hazard Chronic Health Hazard.

SARA Title III - Section 313: No chemicals are reportable under Section 313.

SECTION 16. OTHER INFORMATION

NFPA Rating **Health - 2** **Flammability - 2** **Instability - 0**

SDS Prepared By AES Drilling Fluids

Phone No. 281-556-5628

Date of Preparation July 01, 2015

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