

AES PRIMARY EMULSIFIER

SECTION 1. IDENTIFICATION

Product Identifier	AES PRIMARY EMULSIFIER
Other Means of Identification	Blended Emulsifier
Recommended Use	Drilling Fluid Additive.
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	April 29, 2015

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) - Category 4; Acute toxicity (Dermal) - Category 4; Skin corrosion/irritation - Category 3; Serious eye damage/eye irritation - Category 2B; Skin sensitization - Category 1B; Carcinogenicity - Category 2; Specific target organ toxicity (single exposure) - Category 3; Aspiration hazard - Category 2

GHS Label Elements



Signal Word:

Warning

Hazard Statement(s):

H302	Harmful if swallowed.
H305	May be harmful if swallowed and enters airways.
H312	Harmful in contact with skin.
H316	Causes mild skin irritation.
H317	May cause an allergic skin reaction.
H320	Causes eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.

Precautionary Statement(s):

Prevention:

P264	Wash hands and skin thoroughly after handling.
P261	Avoid breathing vapours, mist, spray.
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.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
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 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P363 Wash contaminated clothing before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Other Hazards

Hazardous to the environment.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Blend of chemically modified tall oil derivative	68154,94-9, 8050-09-7	17-22	
Mixture of Fatty acids, tall oil	61790-12-3	7-10	
Blend of Fatty Acid Amine	CBI*	2-4	
Trade Secret	CBI*	Confidential	
Trade Secret	CBI*	Confidential	
Trade Secret	CBI*	Confidential	
Diethanolamine	111-42-2	0.2-0.6	

Notes

The specific chemical identity and/or exact percentage of composition (concentration) has been withheld as a trade secret.

CBI = Confidential Business Information.

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of contaminant or move to fresh air. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. Get medical advice/attention if irritation develops.

Skin Contact

Immediately rinse with lukewarm, gently flowing water for 15-20 minutes. Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Seek 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. Seek medical advice/attention.

Ingestion

Immediately call a Poison Centre or doctor. Rinse mouth with water. Do not induce vomiting. If vomiting occurs, have victim lean forward to reduce the risk of aspiration.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

Specific Hazards Arising from the Chemical

Product can ignite if strongly heated and exposed to open flames. Closed containers may rupture violently when heated releasing contents.

Product Identifier: AES PRIMARY EMULSIFIER

Date of Preparation: April 29, 2015

Page 02 of 07

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

Isolate the hazard area. 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. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas. Prevent product from entering drains, soil, ditches, sewers, waterways and/or groundwater.

Methods and Materials for Containment and Cleaning Up

Eliminate all ignition sources. Dike spilled product to prevent runoff. Do not use absorbents. Contain spill using noncombustible material such as vermiculite, earth or sand. Place contaminated vermiculite, earth or sand into suitable, covered, labelled containers for disposal. Store recovered product 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

Avoid breathing in this product. Avoid contact with eyes, skin and clothing. Do not ingest product. 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. Avoid generating vapours or mists. Keep containers tightly closed when not in use or empty. Keep away from heat and open flames. See Section 8 for appropriate Personal Protective Equipment (PPE).

Conditions for Safe Storage

Store in an area that is: cool, dry, well-ventilated. Away from open flames, excessive heat or sources of ignition. Separate from incompatible materials (see Section 10: Stability and Reactivity). 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]
Trade Secret	5 mg/m3	10 mg/m3	5 mg/m3	Not established	Not established	Not established
Trade Secret	5 mg/m3		Not established		Not established	
Mixture of Fatty acids, tall oil	5 mg/m3	10 mg/m3	5 mg/m3	Not established	Not established	Not established
Trade Secret	5 mg/m3	10 mg/m3	5 mg/m3	Not established	Not established	Not established
Blend of Fatty Acid Amine	Not established	Not established	Not established	Not established	Not established	Not established
Diethanolamine	1 mg/m3 Skin		Not established		Not established	

Product Identifier: AES PRIMARY EMULSIFIER

Date of Preparation: April 29, 2015

Page 03 of 07

Blend of chemically modified tall oil derivative	Not established		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.

OEL values are for Oil Mist. There is no established TLV or OEL's for petroleum distillates.

Appropriate Engineering Controls

Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air. While working with the product an eyewash and safety shower should be within acceptable distance to the work area.

Individual Protection Measures

Eye/Face Protection

Wear safety glasses and if contact is possible wear chemical safety goggles.

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. If a splashing hazard exists wear chemical protective clothing e.g. gloves that extend up arms, aprons, boots.

Respiratory Protection

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Dark amber liquid.
Odour	Faint
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	> 230 °F (110 °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)	0.95
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

Stable under normal conditions.

Product Identifier: AES PRIMARY EMULSIFIER

Date of Preparation: April 29, 2015

Page 04 of 07

Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

Conditions to Avoid

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; skin absorption; eye contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Trade Secret	Not available	>5000 mg/kg (rat)	Not available
Trade Secret	Not available	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)
Mixture of Fatty acids, tall oil	Not available	> 10000 mg/kg	Not available
Trade Secret	Not available	> 5000 mg/kg (rat)	> 2000 mg/kg (rabbit)
Blend of Fatty Acid Amine	Not available	> 2000 mg/kg (rat)	Not available
Diethanolamine	Not available	.62 mg/kg (rat)	7.64 mg/kg (rabbit)
Blend of chemically modified tall oil derivative	Not available	Not available	Not available

Skin Corrosion/Irritation

May cause skin irritation.

Serious Eye Damage/Irritation

May cause eye irritation. Symptoms include pain, redness and tearing.

STOT (Specific Target Organ Toxicity) - Single Exposure**Inhalation**

May cause irritation of the mucous membranes and upper respiratory tract. May cause depression of the central nervous system. Symptoms may include headache, nausea, dizziness, drowsiness and confusion.

Skin Absorption

Ingredients of this product can be absorbed through the skin.

Ingestion

May cause irritation of the mouth, throat and stomach. May cause depression of the central nervous system.

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 skin contact may aggravate existing skin conditions such as dermatitis.

Respiratory and/or Skin Sensitization

May cause skin sensitization through skin contact. Not known to be a respiratory sensitizer.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Trade Secret	Not Listed	Not Listed	Not Listed	Not Listed
Trade Secret	Not Listed	Not Listed	Not Listed	Not Listed
Mixture of Fatty acids, tall oil	Not Listed	Not Listed	Not Listed	Not Listed

Product Identifier: AES PRIMARY EMULSIFIER

Date of Preparation: April 29, 2015

Page 05 of 07

Trade Secret	Group 3	A4	Not Listed	Not Listed
Blend of Fatty Acid Amine	Not Listed	Not Listed	Not Listed	Not Listed
Diethanolamine	Group 2B	A3	Not Listed	Not Listed
Blend of chemically modified tall oil derivative	Not Listed	Not Listed	Not Listed	Not Listed

May cause cancer based on animal studies.

Key to Abbreviations

IARC = International Agency for Research on Cancer. Group 2B = Possibly carcinogenic to humans. Group 3 = Not classifiable as to its carcinogenicity to humans. ACGIH® = American Conference of Governmental Industrial Hygienists. A3 = Animal carcinogen. A4 = Not classifiable as a human 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.

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
Trade Secret	Not available	Not available	Not available	Not available
Trade Secret	2.9 mg/L (Oncorhynchus mykiss (rainbow trout); 96-hour)	Not available	Not available	Not available
Mixture of Fatty acids, tall oil	Not available	Not available	Not available	Not available
Trade Secret	Not available	Not available	Not available	Not available
Blend of Fatty Acid Amine	Not available	Not available	Not available	Not available
Diethanolamine	55 mg/L (Daphnia magna (water flea); 48-hour; fresh water; static)	Not available	Not available	Not available
Blend of chemically modified tall oil derivative	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

Product Identifier: AES PRIMARY EMULSIFIER

Date of Preparation: April 29, 2015

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

The shipping descriptions included are for non-bulk shipments only and may not apply to shipments in bulk packages (see appropriate regulatory definition).

This product contains one or more ingredients as a hazardous substance in Appendix A of 49 CFR 172.101. The product quantity, in one package, which triggers the RQ requirements under 49 CFR for each hazardous substance is shown.

Reportable quantities:

RQ substance: Diethanolamine

RQ limit for substance: 100lb

RQ limit for product: 13200lb

Shipping information for product over in containers larger than 13200lb would be UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIETHANOLAMINE), CLASS 9, PG III

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: May contain <0.75% Diethanolamine.

SARA Title III - Section 302: No listed components.

SARA Title III - Section 311/312: Acute Hazards Chronic Health Hazard.

SARA Title III - Section 313: May contain <1.0% Glycol Ether

May contain <0.75% Diethanolamine.

SECTION 16. OTHER INFORMATION

NFPA Rating **Health - 2** **Flammability - 1** **Instability - 0**

SDS Prepared By AES Drilling Fluids

Phone No. 281-556-5628

Date of Preparation April 29, 2015

Disclaimer Do not handle or use until precautions on MSDS are read and understood. The information on this form is furnished solely for the purpose of enabling those who transport, handle or use our products to ensure the safety and health of their employees and to comply with various laws and regulations (federal, state and local). We believe the statements, technical information and recommendations contained herein are reliable but, they are given without warranty or guarantee of any kind, express or implied and we assume no responsibility for any loss, damage, direct or consequential, arising out of their use.

Product Identifier: AES PRIMARY EMULSIFIER

Date of Preparation: April 29, 2015

Page 07 of 07