

SAFETY DATA SHEET

SECTION 1: Product and Company Identification

Total Armor 607

Product type: Deisel Fuel Additive

Application: Cleaning/Maintenance/Performance. Add to any diesel fuel. Do not ingest.

Supplier/Manufacturer: **LSI Chemical**
3975 Morrow Meadows Drive
Mount Gilead, OH 43338
US Phone: (419) 947-2647
Telefax: (415) 946-3554
Email: info@lsichemical.com

Emergency Telephone number: Within USA and Canada: ChemTel, 24 hrs. +1 (800) 255-3924
Outside USA and Canada:* +1 (703) 741-5970
*Collect calls accepted 24/7

SECTION 2: Hazards Identification

Classification of the Substance or Mixture

GHS Classification in Accordance with 26 CFR 1940 (OSHA HCS):

Physical, Flammable Liquids, 4
Health, Skin corrosion/irritation, 2
Health, Serious Eye Damage/Eye Irritation, 2A
Health, Specific target organ toxicity - Single exposure, 3
Health, Acute toxicity, 4 Dermal
Health, Acute toxicity, 4 Inhalation
Health, Acute toxicity, 4 Oral
Health, Carcinogenicity, 2
Health, Aspiration hazard, 1
Environmental, Hazards to the aquatic environment - Chronic, 2

GHS Label Elements, Including Precautionary Statements

GHS Signal Word: **DANGER**

GHS Hazard Pictograms:



GHS Hazard Statements:

- H227 - Combustible liquid
- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H336 - May cause drowsiness or dizziness
- H335 - May cause respiratory irritation
- H312 - Harmful in contact with skin
- H332 - Harmful if inhaled
- H302 - Harmful if swallowed
- H351 - Suspected of causing cancer
- H304 - May be fatal if swallowed and enters airways
- H411 - Toxic to aquatic life with long lasting effects

GHS Precautionary Statements:

- P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking
- P242 - Use non-sparking tools.
- P243 - Take action to prevent static discharges.
- P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
- P273 - Avoid release to the environment.
- P280 Wear protective gloves/eye protection/face protection.
- P301+312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P303+361+353+364 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
- P304+340 - IF INHALED: Remove victim 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.
- P308+313 - IF exposed or concerned: Get medical advice/attention.

Hazards not Otherwise Classified or not Covered by GHS

When heated above 100 C (212 F) may undergo a self-accelerating, exothermic reaction which causes a rapid rise in temperature and pressure. Rupture of storage vessels and fire should be anticipated in case of such temperature.

VAPOR MAY CAUSE FLASH FIRE

SECTION 3: Composition/Information on Ingredients

<u>Ingredient Name</u>	<u>% (Avg)</u>	<u>CAS Number</u>
2-ethylhexyl nitrate	42-43%	27247-96-7
Tall Oil Fatty Acid	10%	61790-12-3
TRADE SECRET	6-7%	Trade Secret
Solvent naphtha petroleum, heavy aromatic	6-7%	64742-94-5
TRADE SECRET	6-7%	Trade Secret
Distillates, petroleum hydrotreated, light	6%	64742-47-8
TRADE SECRET	2-6%	Trade Secret
1,2,4-Trimethylbenzene	.5-3.5%	95-63-6
Solvent naphtha, petroleum, light aromatic	<3%	64742-95-6
Xylene	<3%	1330-20-7
Amine Compound	<3%	84605-20-9
Naphthalene	<2%	91-20-3

1,3,5-Trimethylbenzene	<2%	108-67-8
n-Propyl benzene	<2%	103-65-1
1,2,3-Trimethylbenzene	<1%	526-73-8
Ethyl benzene	<1%	100-41-4

ANY CONCENTRATION SHOWN AS A RANGE IS TO PROTECT CONFIDENTIALITY OR IS DUE TO BATCH VARIATION

SECTION 4: First Aid Measures

Eyes: Immediately flush with gentle but large stream of water for 15 min, lifting upper and lower eyelids occasionally. Get medical attention if irritation develops.

Skin: Wash affected area with soap and water. If itching or redness develops, seek medical attention. Contaminated clothing should be removed immediately and washed before reuse. Contaminated shoes should be discarded.

Inhalation: Move the person to fresh air. If breathing becomes difficult, contact a physician.

Ingestion: Do not induce vomiting. If large amounts were swallowed, give water to rinse mouth, give water to drink, and get medical attention if you feel unwell.

Most important symptoms/effects, Acute and delayed:

Skin contact: No specific data

Ingestion: No specific data

Inhalation: No specific data

Eye Contact: No specific data

SECTION 5: Firefighting Measures

Flash Point: > 68 C (> 155 F)

Extinguishing Media: Water spray, dry chemical, alcohol foam, or carbon dioxide.

Unsuitable extinguishing media: Water jet.

Special Protective Equipment

for firefighters: Self-contained breathing apparatus and protective clothing when fighting any chemical fire.

Unusual Fire and Explosion Hazards: In case of fire, containers may explode from internal pressure. Cool with water. VAPOR MAY CAUSE FLASH FIRE. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Decomposition products may include NO_x, CO, and CO₂.

Special protective equipment for fire-fighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental Release Measures

Personal Precautions:	Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep personnel removed and upwind of spill. Eliminate all ignition sources. Keep unnecessary and unprotected personnel from entering.
Environmental precautions:	P273: Avoid release to the environment Limit leakage with earth or sand. Do not discharge into the drains/surface water/groundwater. Dispose of absorbed material in accordance with local, state and federal regulations.
Methods for containment/ Cleaning up:	<p>Initial Containment: Approach release from upwind. Eliminate all sources of ignition – heat, sparks, flame, electricity, and impact. Contain spilled material with dikes or absorbents. Do not allow material to enter soil, surface water, or sewer system. Stop the source of the leak, if safe to do so.</p> <p>Large Spill: Contain spilled material. Vacuum or sweep up material and place in a disposal container. Absorb residue with inert material (e.g., dry sand or earth,) then place in a chemical waste container. Do not flush to sewer. Use explosion-proof equipment during clean-up.</p> <p>Small Spill: Contain spilled material. Absorb with inert material and place in disposal container. Spills are extremely slippery. Clean up immediately.</p> <p>Miscellaneous: Note that combustible vapors may form an ignitable mixture with air. Vapors may travel considerable distances from spill and flash back, if ignited. Report spills to local authorities and/or the U.S. coast Guard's National Response Center at (800) 424-8802 as appropriate or required.</p>

SECTION 7: Handling and Storage

Handling:	<p>P261: Avoid breathing vapors or spray mists. P262: Do not get in eyes, on skin, or on clothing P264: Wash thoroughly after handling P280: Wear protective gloves/eye protection Handle with care and avoid spillage on the floor (slippage). Do not cut, weld, drill, grind, braze, pressurize or solder container. Keep away from sources of ignition. Ground and bond containers when transferring material.</p> <p>When heated above 100 C (212 F) may undergo a self-accelerating, exothermic reaction which causes a rapid rise in temperature and pressure. Rupture of storage vessels and fire should be anticipated in case of such temperature.</p>
Storage:	<p>P402+404: Store in a dry place. Store in a closed container P403+233: Store in a well-ventilated place. Keep container tightly closed Protect from moisture. Do not store together with acids. Keep out of direct sunlight Keep away from sources of ignition.</p>
General Hygiene Practices:	Eating drinking and smoking should be prohibited in areas where this material is handled, stored and processed
Special Packaging Requirements:	None
Incompatible Materials:	Oxidizing material. Avoid prolonged contact with porous materials. May burn or react violently to fluorine/oxygen mixtures.

SECTION 8: Exposure Controls/Personal Protection

Occupational exposure limits:

Under conditions which may generate mists, Observe exposure limits for Oil Mist (NOC):

ACGIH: TWA: 5 mg/m³ Respirable; STEL 10mg/m³ Respirable

OSHA: TWA: 5 mg/m³ Respirable.

NIOSH REL: TWA 10mg/m³ Respirable.

Ingredient	CAS#	Exposure limits
Light Aromatic Solvent		
Naptha (Petroluem)	64742-95-6	OSHA TWA: 500ppm
1,2,4-Trimethylbenzene	95-63-6	ACGIH TWA: 25ppm
Xylene	1330-20-7	OSHA TWA: 100ppm; 435 mg/m ³
Naphthalene	91-20-3	OSHA TWA: 10 ppm, 50 mg/m ³
Trade Secret	-	OSHA PEL: 100 ppm, 600 mg/m ³
1,3,5-Trimethylbenzene	108-67-8	ACGIH TWA: 25ppm

Personal Protective Equipment

Hands:	Use impervious gloves.
Eyes:	Wear safety glasses with side shields.
Skin:	Wear protective clothing, wash hands thoroughly after handling.
Respiratory:	Respiratory protection is recommended if ventilation is limited.

Appropriate Engineering Controls:

Good ventilation sufficient to control worker exposure to airborne contaminants

Environmental exposure Controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation

Other measures:

Have access to an eye wash station. Launder contaminated clothing before reuse. Use good industrial hygiene practices in handling this material.

SECTION 9: Physical and Chemical Properties

Appearance

Physical State:	Liquid
Color:	Amber
Odor:	Hydrocarbon-like
Odor threshold:	Not available
pH:	Not available
Melting point:	Not determined
Boiling point:	Not available
Flash point:	>155°F (68°C)
Evaporation rate:	Not available
Flammability (solid, gas):	Not available

Lower and upper explosive (flammable) limits:	Not available
Vapor pressure:	Not available
Vapor density:	Not available
Relative density:	.924
Solubility:	Not available
Partition coefficient: n-Octanol/water:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not available
Volatility:	Not available
VOC (w/w):	Not available

SECTION 10: Stability and reactivity

Reactivity:	No specific test data available
Chemical Stability:	May be unstable at temperatures greater than 100°C (212°F).
Conditions to Avoid:	High temperatures above 50°C (122°F),, sources of ignition.
Incompatible Materials:	Oxidizing material. Avoid prolonged contact with porous materials. May burn or react violently to fluorine/oxygen mixtures.
Hazardous Decomposition Products:	Products of combustion: NO _x , CO _x

SECTION 11: Toxicological Information

Likely Routes of Exposure: Dermal, eye, inhalation, ingestion

Acute Toxicity

<u>Ingredient</u>	<u>Result</u>	<u>Species</u>	<u>Dose/ATE</u>	<u>Comments</u>
2-Ethylhexylnitrate	LD50 Dermal	Rabbit	>5000 mg/kg	
	LD50 Oral	Rat	>10000 mg/kg	
Amine compound 1,2,4-Trimethylbenzene	LD50 Dermal	Rat	>2000 mg/kg	
	LD50 Inhalation	Rat	18000 mg/m ³ /4h	vapor
	LD50 Oral	Rat	3400-6000 mg/kg	-
Tall Oil Fatty Acid	LD50 Dermal	Rabbit	3160 mg/kg	-
	LD50 Dermal	Rabbit	>2000 mg/kg/14days	No death at this dose
	LD50 Oral	Rat	>10000 mg/kg/14days	No death at this dose
Trade Secret	ATEmix Dermal	-	3000 mg/kg	-
Light aromatic solvent Naphtha (petroleum)	LD50 Dermal	Rabbit	>3160 mg/kg	
	LD50 Oral	Rat	3492 mg/kg	
	LC50 Inhalation	Rat	6193 mg/m ³ /4h	Vapor
Xylene	LC50 Inhalation	Rat	5000 ppm/4h	Gas
	LD50 Dermal	Rabbit	>1700 mg/kg	
	LD50 Oral	Rat	4300 mg/kg	
Trade Secret	LD50 Dermal	Rabbit	>19000 mg/kg	-
	LD50 Oral	Rat	5135 mg/kg	-
Naphthalene	LD50 Dermal	Rat	>2500 mg/kg	-
	LD50 Oral	Rat	>2600 mg/kg	-
	LC50 Inhalation	Rat	>100ppm/8hrs	Gas

1,3,5 Trimethylbenzene	LC50 Inhalation	Rat	24000 mg/m ³ /4hrs	Vapor
	LD50 Oral	Rat	5000mg/kg	

Sensitization:	None known.
Germ Cell Mutagenicity:	None known.
Carcinogenicity:	Naphthalene, IARC 2B
Reproductive toxicity:	None known.
Specific target organ systemic toxicity (repeated exposure):	None known.

SECTION 12: Ecological Information

Ecotoxicity

1,2,4-Trimethylbenzene

LC50 4910 ug/l Marine water Crustaceans-Elasmopus pectenircus 48 hrs
 LC50 22.4 mg/l Fresh water Fish – Tilapia zillii 96hrs

1,3,5-Trimethylbenzene

LC50 12520-15050 ug/l Fresh water fish-Carassius auratus 96 hrs
 Chronic NOEC 400 ug/l Fresh water Daphnia-Daphnia magna 21days

Xylene

LC50 8500 ug/l Marine water Crustaceans-Palaemonetes Pugio 48hrs
 LC50 13400 ug/l Fresh water Fish-Pimephales promelas 96hr

Tall oil Fatty Acids:

EC50 Bacteria (*Pseudomonas putida*): > 10000 mg/L 16hr
 ECL50 Green algae (*Selenastrum capricornutum*): > 1000 mg/L 72 hr Growth rate; OECD 201
 EL50 Water flea (*Daphnia magna*): > 1000 mg/L 48 hr OECD 202
 LL50 Zebra danio (*Danio rerio*): > 10000 mg/L 96hr

Trade Secret:

LC50 Fathead minnow (*Pimephales promelas*): > 1000 mg/L Mortality 1hr
 LC50 Fathead minnow (*Pimephales promelas*): > 285 mg/L Mortality 24hr
 LC50 Fathead minnow (*Pimephales promelas*): > 252 mg/L Mortality 48hr
 LC50 Fathead minnow (*Pimephales promelas*): > 205 mg/L Mortality 72hr
 LC50 Fathead minnow (*Pimephales promelas*): > 205 mg/L Mortality 96hr

Avoid exposing to the environment.

Toxic to aquatic organisms.

May cause long term adverse effects in the aquatic environment. Based on calculations.

This product contains components which may be persistent in the environment.

Chronic hazards to Aquatic Environment: No specific data available

Persistence and Degradability: No specific data available

Mobility in Soil: No specific data available

PBT/VPvB Assessment: No specific data available

Other Adverse Effects: No specific data available

Additional ecological information: Information given is based on data on the ingredients and the ecotoxicology of similar products.

SECTION 13: Disposal Considerations

Disposal methods: Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority. Waste should not be

disposed of untreated into the sewer. Empty containers may retain some product residues.

SECTION 14: Transportation Information

NA1993, Combustible liquid, n.o.s., Combustible liquid, PGIII, (Contains 2-Ethylhexylnitrate, Petroleum Naphtha), (Marine pollutant)

Not regulated by US DOT in containers less than 119 gallons.

IMDG & IATA: UN3082, Environmentally Hazardous Substance, liquid, nos, (2-Ethylhexylnitrate, Petroleum Naphtha), 9, III. Marine pollutant.

SECTION 15: Regulatory Information

US federal regulations

Use as animal feed is prohibited. This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All known components are on the U.S. EPA TSCA Inventory List.



WARNING This product can expose you to chemicals including Naphthalene and Ethylbenzene, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other Information

Date of Issue: 2/13/2020

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Version: 1.1

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