



## SAFETY DATA SHEET

### SECTION 1: Product and Company Identification

#### TotalArmor Clean 450

**Product type:** 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, Acute toxicity, 4 Dermal  
Health, Acute toxicity, 4 Inhalation  
Health, Acute toxicity, 4 Oral  
Health, Skin irritation, 2  
Health, Serious Eye Irritation, 2A  
Health, Specific target organ toxicity - Single exposure, 3 respiratory and/or narcotic  
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
- H332 - Harmful if inhaled
- H312 - Harmful if in contact with skin
- H302 - Harmful if swallowed
- H336 - May cause drowsiness or dizziness
- 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:**

- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P280 - Wear protective gloves and eye protection.
- P264 - Wash hands thoroughly after handling.
- P210 - Keep away from flames and hot surfaces. - No smoking
- P271 - Use only outdoors or in a well-ventilated area.
- P261 - Avoid breathing fumes/vapors.
- P273 - Avoid release to the environment.
- P301+312 +P330 - IF SWALLOWED: Immediately call a poison center; rinse mouth. Do NOT induce vomiting.
- P303+361+353+364 – IF ON SKIN: Wash with plenty of soap and water Remove contaminated clothing and wash before reuse.
- P332+P313 - IF SKIN IRRITATION OCCURS: Get medical advice.
- 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.
- P312 - Call a poison control center if you feel unwell
- P308+313 - IF exposed or concerned: Get medical advice.
- P370+P378 - In case of fire: Use dry chemical to extinguish.
- P405 - Store locked up
- P403+P235 - Store in a well-ventilated place. Keep cool.
- P501 - Dispose of contents/container in accordance with regional/national regulations.

**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	49%	27247-96-7
Distillates, petroleum hydrotreated, light	34%	64742-47-8
Solvent naphtha petroleum, heavy aromatic	2-5%	64742-94-5
Dipropylene glycol methyl ether	3%	34590-94-8
Long Chain alkenyl heterocycle (Proprietary)	<2%	Trade Secret
1,2,4-Trimethylbenzene	<2 %	95-63-6
Xylene	<1%	1330-20-7

Solvent naphtha, petroleum, light aromatic	<1%	64742-95-6
1,3,5-Trimethylbenzene	<1%	108-67-8
Ethylbenzene	<1%	100-41-4
Cumene	<1%	98-82-8
Naphthalene	<1%	91-20-3
Amine Compound	<1%	84605-20-9
n-Propyl benzene	<1%	103-65-1
1,2,3-Trimethylbenzene	<1%	526-73-8

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:** > 70°C (> 158°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<sub>x</sub>, CO, and CO<sub>2</sub>.

**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.

<b>SECTION 6: Accidental Release Measures</b>
-----------------------------------------------

**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:**

**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.

**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.

**Small Spill:** Contain spilled material. Absorb with inert material and place in disposal container. Spills are extremely slippery. Clean up immediately.

**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.

<b>SECTION 7: Handling and Storage</b>
----------------------------------------

**Handling:**

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  
P210 - Keep away from flames and hot surfaces. - No smoking

**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.**

**Storage:**

P405 - Store locked up  
P403+P235 - Store in a well-ventilated place. Keep cool.  
Do not store together with acids.  
Keep out of direct sunlight  
Keep away from sources of ignition.

**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/m<sup>3</sup> Respirable; STEL 10mg/m<sup>3</sup> Respirable

OSHA: TWA: 5 mg/m<sup>3</sup> Respirable.

NIOSH REL: TWA 10mg/m<sup>3</sup> 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 <sup>3</sup>
Naphthalene	91-20-3	OSHA TWA: 10 ppm, 50 mg/m <sup>3</sup>
1,3,5-Trimethylbenzene	108-67-8	ACGIH TWA: 25ppm

### Personal Protective Equipment

<b>Hands:</b>	Use impervious gloves.
<b>Eyes:</b>	Wear safety glasses with side shields.
<b>Skin:</b>	Wear protective clothing, wash hands thoroughly after handling.
<b>Respiratory:</b>	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
<b>Odor:</b>	Hydrocarbon-like
<b>Odor threshold:</b>	Not available
<b>pH:</b>	Not available
<b>Melting point:</b>	Not determined
<b>Boiling point:</b>	Not available
<b>Flash point:</b>	>155°F (68°C)
<b>Evaporation rate:</b>	Not available
<b>Flammability (solid, gas):</b>	Not available

<b>Lower and upper explosive (flammable) limits:</b>	Not available
<b>Vapor pressure:</b>	Not available
<b>Vapor density:</b>	Not available
<b>Relative density:</b>	0.89 at 60°F (Water=1)
<b>Solubility:</b>	Nil in water
<b>Partition coefficient: n-Octanol/water:</b>	Not available
<b>Auto-ignition temperature:</b>	Not available
<b>Decomposition temperature:</b>	Not available
<b>Viscosity:</b>	TBD
<b>Volatility:</b>	Not available
<b>VOC (w/w):</b>	Not available

### SECTION 10: Stability and reactivity

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

### SECTION 11: Toxicological Information

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

**Acute Toxicity**

<b><u>Ingredient</u></b>	<b><u>Result</u></b>	<b><u>Species</u></b>	<b><u>Dose/ATE</u></b>	<b><u>Comments</u></b>
2-Ethylhexylnitrate	LD50 Dermal	Rabbit	>5000 mg/kg	
	LD50 Oral	Rat	>10000 mg/kg	
1,2,4-Trimethylbenzene	LD50 Inhalation	Rat	18000 mg/m <sup>3</sup> /4h	vapor
	LD50 Oral	Rat	3400-6000 mg/kg	-
	LD50 Dermal	Rabbit	3160 mg/kg	-
Heavy aromatic solvent Naphtha (petroleum)	LC50 Inhalation	Rat	710ppm	No death at this dose
Light aromatic solvent Naphtha (petroleum)	LD50 Dermal	Rabbit	>3160 mg/kg	
	LD50 Oral	Rat	3492 mg/kg	
	LC50 Inhalation	Rat	6193 mg/m <sup>3</sup> /4h	Vapor
Xylene	LC50 Inhalation	Rat	5000 ppm/4h	Gas
	LD50 Dermal	Rabbit	>1700 mg/kg	
	LD50 Oral	Rat	4300 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 <sup>3</sup> /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 pecteniscrus 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

#### *2-Ethylhexyl Nitrate*

LC50 4.5mg/l Bluegill 96hrs

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 Cumene, Naphthalene and Ethylbenzene, which are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### SECTION 16: Other Information

Date of Issue: 8/06/2020

Date of Previous Issue: 06/25/2019

Version: 6.0

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness and is provided “AS IS”. It is the user's responsibility to satisfy him/herself as to the suitability of such information for his/her own particular use.