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MATERIAL SAFETY DATA SHEET

In Case of Emergency Call: CHEM-TEL 1-800-255-3924

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Issue Date: 1/02/06 Product Name: TOTAL FUEL SYSTEM CLEANER Reference Number HPF-200

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Names	CAS No.	Exposure Limit
Hydrodesulfurized Kerosene	64742-81-0	*ACGIH/TLV 100 mg/m ³
Hydrotreated Distillate Light	64742-47-8	*ACGIH/TLV 100 mg/m ³
Kerosene, straight run	8008-20-6	*ACGIH/TLV 100 mg/m ³
Furan	110-00-9	Not established by OSHA/ACGIH
Propylene Oxide	75-56-9	OSHA: 100 ppm TWA 240 mg/m ³ TWA ACGIH: 20 ppm TWA 48 mg/m ³ TWA
Acetaldehyde	75-07-0	OSHA: 200 ppm TWA 360 mg/m ³ TWA ACGIH: 25 ppm Ceiling 45 mg/m ³ Ceiling
Aromatic Solvent Naphtha	64742-95-6	Not established by OSHA/ACGIH
1,2,4 Trimethylbenzene	95-63-6	NIOSH: TWA: 25 ppm, 125 mg/m ³ OSHA: TWA: 25 ppm, 123 mg/m ³
Xylene	1330-20-7	OSHA: 100 ppm, 435 mg/m ³ STEL: 150 ppm (655 mg/m ³) ACGIH: 100 ppm, 434 mg/m ³ STEL: 150 ppm, (655 mg/m ³)
Cumene	98-82-8	50 ppm TWA, skin (OSHA/ACGIH)
Ethylbenzene	100-41-4	OSHA: 100ppm, 435 mg/m ³ STEL: 125 ppm (545 mg/m ³) ACGIH: 100ppm (434 mg/m ³) STEL: 125 ppm (543 mg/m ³)

* The ACGIH has proposed adopting an exposure limit of 100 mg/m³ for Diesel fuel/Kerosene. NIOSH has also proposed 100 mg/m³ for an 8 hr. TWA or ~14 ppm 8 hr. TWA, based on an average molecular weight of 170 for kerosene like fractions. Product may contain traces of sulfur and benzene.

SECTION 3 HAZARDS IDENTIFICATION

Exposure Effects

Symptoms of Exposure:

Eye: Severe burning sensation with temporary irritation and swelling of lids.

Skin: Defatting of the skin may occur with continued and prolonged contact. Irritation and burning sensation may occur on exposure to the liquid or mists, as well as the possibility of blisters. Hair loss can occur upon chronic exposure.

Inhalation: Irritation of the upper respiratory tract and eyes, with possible euphoria, dizziness, headache, disorientation, ringing in the ears, convulsions, coma, and respiratory arrest.

Ingestion: Irritation of the mucous membranes of the throat, esophagus and stomach which may result in nausea and vomiting; central nervous system depression may occur, if absorbed (see Inhalation symptoms above). If aspirated, chemical pneumonitis may occur with potentially fatal results.

Carcinogenicity Statement: Kerosene is not listed as carcinogenic by NTP, OSHA, and ACGIH. IARC has listed kerosene as a probable human carcinogen (2A).

Medical Condition Generally Aggravated by Exposure: Medical conditions which have the same symptoms and effects as those outlined under the health hazard information section can be aggravated by exposure to this product.

Hazards of Combustion Products: Carbon monoxide and carbon dioxide can be found in the combustion products of this product and other forms of hydrocarbon combustion. Carbon monoxide in moderate concentrations can cause symptoms of headache, nausea, vomiting, increased cardiac output, and confusion. Exposure to higher concentrations of carbon monoxide can cause loss of consciousness, heart damage, brain damage and/or death. Exposure to high concentrations of carbon dioxide can cause simple asphyxiation by displacing available oxygen. Combustion of this and other similar materials should only be carried out in well ventilated areas. The National Kerosene Heater Association has released preliminary test results that indicate no increased emissions of carbon monoxide or nitrogen dioxide resulted from using red-dyed kerosene in "new generation" heaters.

SECTION 4 FIRST AID MEASURES

Emergency and First Aid Procedures:

Eye Contact: Immediately flush eyes with large amounts of water for at least 15 minutes holding lids apart to ensure flushing of the entire eye surface. Get prompt medical attention.

Skin Contact: Immediately flush with large amounts of water; use soap if available. Remove contaminated clothing, including shoes, after flushing has begun. A soothing ointment may be applied to irritated skin after thoroughly cleansing. If irritation persists, seek medical attention.

Inhalation: Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration followed by oxygen if breathing is stopped. Keep at rest. Call for prompt medical attention.

Ingestion: DO NOT induce vomiting. If individual is conscious, give milk or water to dilute stomach contents. Keep warm and quiet. Get prompt medical attention. DO NOT attempt to give anything by mouth to an unconscious person.

Notes to Physician: Do not induce vomiting, use gastric lavage only. Aspiration of liquid into the lungs could result in Chemical pneumonitis. Use of adrenaline is not advised. Treat symptomatically.

SECTION 5 FIRE-FIGHTING MEASURES

Flashpoint: Minimum 100° F / 38°C PMCC

General Hazard: Toxic gases will form upon combustion. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Fire Fighting: Use foam, dry chemical, or carbon dioxide to extinguish fire. Use water spray to cool fire exposed containers, equipment and to protect personnel. DO NOT spray water directly on fire - the product will float and could be re-ignited on surface of water. Isolate "fuel" supply from fire. Respiratory and eye protection required for fire fighting personnel. Avoid spraying water directly into storage containers due to danger of boilover. This liquid is volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

Unusual Fire and Explosion Hazards: Clothing, rags, or similar organic material contaminated with the product and stored in a closed space may undergo spontaneous combustion. Vapor accumulation is possible, and flashback can occur with explosive force if vapors are ignited. Vapors may be heavier than air. May travel long distances along the ground before igniting and flashing back to vapor source.

Special Fire Fighting Procedures: Pressure-demand, self-contained, breathing apparatus should be provided for fire fighters in buildings or confined areas where product is stored.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Land Spill: Eliminate sources of ignition. Prevent additional discharge of material, if possible to do so without hazard. For small spills implement cleanup procedure; for large spills implement cleanup procedures and, if in public area, keep public away and advise authorities. Also, if this product is subject to CERCLA reporting (see Section 15 REGULATORY INFORMATION) notify the National Response Center. Prevent Liquid from entering sewers, watercourses, or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust. Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent. If liquid is too viscous for pumping, scrape up. Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

Water spill: Eliminate sources of ignition. Warn occupants and shipping in surrounding and downwind areas of fire and explosion hazard and request all to stay clear. Remove from surface by skimming or with suitable adsorbents. If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in non-confined waters. Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

SECTION 7 STORAGE AND HANDLING

Do not get in eyes, on skin or on clothing. Do not breathe vapors, mist fume or dust. Do not breath vapors, mist, fume or dust. Do not swallow, may be aspirated into lungs. Wear protective equipment and/or garments if exposure conditions warrant. Wash thoroughly after handling. Immediately remove and launder contaminated clothing before reuse. Use only with adequate ventilation.

Store only in approved containers. Protect containers against physical damage. Keep container closed. Handle and open containers with care. Store in a cool, well ventilated area away from incompatible materials. Outside or detached storage is preferred. Separate from oxidizing materials. Keep away from incompatible materials and follow OSHA 29 CFR 1910.106 and NFPSA 30 for storage requirements. DO NOT handle or store near an open flame, heat, or other ignition sources. DO NOT pressurize, cut, heat, or weld containers. Empty product containers may contain product residue. DO NOT reuse empty containers without commercial cleaning or reconditioning.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Controls: Work in well ventilated areas using good engineering practices to process, transfer and store. Special ventilation is not required unless product is sprayed or heated. High volume use may require engineering controls.

Personal Protection: For open systems where contact is likely, wear long sleeves, chemical resistant gloves, and chemical goggles or safety glasses with side shields. Where overexposure by inhalation may occur, or in case of spill or leak resulting in unknown concentration, use appropriate NIOSH/MSHA approved air purifying respirator. If conditions immediately dangerous to life or health (IDLH) exist, use NIOSH/MSHA approved self-contained breathing apparatus (SCBA) equipment.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity: 0.83 at 15°C
Appearance: Amber, Clear

Solubility in water: Negligible
Odor: Amine, Aromatic

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable
Hazardous Polymerization: None.

Materials to Avoid: Strong oxidizers such as chlorine, fluorine, nitrogen, tetraoxide, concentrated oxygen, and sodium hypochlorite or other hypochlorites, and strong acids. May react exothermically with isocyanates.

Hazardous Decomposition Products: Thermal decomposition products may include carbon monoxide, carbon dioxide, oxides of sulfur and nitrogen, and other toxic gases. Carbon monoxide is highly toxic if inhaled. Carbon dioxide in sufficient concentrations can act as an asphyxiant. Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

SECTION 11 TOXICOLOGICAL INFORMATION

Trimethylbenzene is considered toxic to blood.

SECTION 12 ECOLOGICAL INFORMATION

No specific ecological data are available for this product.

SECTION 13 DISPOSAL CONSIDERATIONS

Insure conformity with all Applicable Disposal Regulations. Empty drums should be completely drained, bunged and promptly returned to a drum re-conditioner, or properly disposed of. Waste product and contaminated material having a flash point below 140°F is considered a hazardous waste. DOT Hazardous Waste Number D001 applies. Consult 40 CFR 262 for EPA disposal requirements.

SECTION 14 TRANSPORTATION INFORMATION

*For shipments within the United States: Since this product has a flashpoint of $\geq 100^\circ\text{F}$ and no other hazard class applies, it may be re-classed as a Combustible Liquid and NA1993 substituted for the product specific I.D. Number above. Consult 49 CFR 173.120 for specific details.

*DOT Proper Shipping Name: Combustible Liquid, N.O.S.,(1,2,4 Trimethylbenzene, Cumene, Ethylbenzene, Xylene), Combustible Liquid, NA 1993, PG III.

SECTION 15 REGULATORY INFORMATION

TSCA: Components of this product are listed on the TSCA Inventory
SARA (Superfund Amendments and Reauthorization Act) TITLE III: This product is reportable under SARA Title III, Sections 311 and 312 as a hazardous substance.

Hazard Categories Applicable under 40 CFR 370.2 (SARA Section 311):

Acute Health	Yes
Chronic Health	Yes
Pressure	No
Fire	Yes
Reactive	No

HAZARDOUS MATERIALS PRESENT IN THIS PRODUCT:

Chemical Names	CAS No.	Exposure Limit	% Present
1,2,4 Trimethylbenzene	95-63-6	NIOSH: TWA 25 ppm	≤ 1.1
*Xylene RQ 100 lbs	1330-20-7	OSHA: TWA 25 ppm OSHA: 100 ppm ACGIH: 100 ppm STEL: 150 ppm	≤ 0.1
Cumene RQ 5000 lbs	98-82-8	50 ppm TWA8, skin (OSHA/ACGIH)	≤ 0.05
Ethylbenzene RQ 1000 lbs	100-41-4	OSHA: 100ppm, 435 mg/m ³ STEL:125 ppm (545 mg/m ³) ACGIH:100ppm (434 mg/m ³) STEL:125 ppm (543 mg/m ³)	≤ 0.02

*This product is a toxic chemical and is required to be disclosed under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

SECTION 16 OTHER INFORMATION

Hazard Rating Systems: This information is for people trained in:

**National Paint & Coatings Association's (NPCA)
Hazardous Materials Identification System (HMIS)
National Fire Protection Association (NFPA 704)
Identification of the Fire Hazards of Materials**

	NPCA-HMIS	Key
Health	1	4=Severe
Flammability	2	3=Serious
Reactivity	0	2=Moderate
		1=Slight
		0=Minimal