Date: 04/17/2006

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: **Slick-Pak Liquid**
Synonyms: Polyacrylamide in water-in-oil emulsion
Chemical Family: Polyacrylamide
Molecular Formula: Mixture
Molecular Weight: Mixture

Fritz-Pak Corporation, 11220 Grader Street, Suite 600, Dallas, TX 75238, USA
For Product Information call 1-888-746-4116. For outside the USA, call 1-214-221-9494.

2. COMPOSITION/INFORMATION ON INGREDIENTS

OSHA REGULATED COMPONENTS

Component / CAS No.	% (w/w)	OSHA (PEL):	ACGIH (TLV)	Carcinogen
Alcohols (C10-16), ethoxylated 68002-97-1	0 - 2.7	Not established	Not established	-
Alcohols (C12-16), ethoxylated 68551-12-2	0 - 2.7	Not established	Not established	-
Alcohols, C12-14-secondary, ethoxylated 84133-50-6	0 - 2.7	Not established	Not established	-
C12-C14 Alcohol Ethoxylated 68439-50-9	0 - 2.7	Not established	Not established	-
Petroleum distillate hydrotreated light 64742-47-8	20.5 - 22.5	500 ppm 1200 mg/m^3 (Supplier) 165 ppm (Supplier)	(skin)	-

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE AND ODOR:

Color: grayish-white
Appearance: emulsion
Odor: ammonia

STATEMENTS OF HAZARD:

WARNING! CAUSES SKIN IRRITATION
MAY CAUSE EYE IRRITATION

POTENTIAL HEALTH EFFECTS

EFFECTS OF EXPOSURE: Acute oral (rat) and dermal (rabbit) LD50 values are estimated to be greater than 5,000 mg/kg and greater than 2,000 mg/kg, respectively. The 4-hour inhalation LC50 (rat) value is estimated to be greater than 20 mg/L. Direct contact with this material can cause moderate skin and mild eye irritation. Refer to Section 11 for toxicology information on the regulated components of this product.

4. FIRST AID MEASURES

Ingestion:
If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Skin Contact:
Remove contaminated clothing and shoes without delay. Wash immediately with plenty of water. Do not reuse contaminated clothing without laundering. Get medical attention if pain or irritation persists after washing or if signs and symptoms of overexposure appear.

Eye Contact:
Rinse immediately with plenty of water for at least 15 minutes.

Inhalation:
Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms.

5. FIRE-FIGHTING MEASURES

Extinguishing Media:
Use water spray, alcohol foam, carbon dioxide or dry chemical to extinguish fires. Water stream may be ineffective.

Protective Equipment:
Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).

Special Hazards:
Keep containers cool by spraying with water if exposed to fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
Where exposure level is not known, wear approved, positive pressure, self-contained respirator. Where exposure level is known, wear approved respirator suitable for level of exposure. In addition to the protective clothing/equipment in Section 8 (Exposure Controls/Personal Protection), wear impermeable boots.

Methods For Cleaning Up:
Product may cause a slip hazard. Spilled material should be absorbed onto an inert material and scooped up. Flush spill area with water. If slipperiness remains apply more dry-sweeping compound.

7. HANDLING AND STORAGE

HANDLING

Precautionary Measures: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Special Handling Statements: None

STORAGE
To avoid product degradation and equipment corrosion, do not use iron, copper or aluminum containers or equipment. Flashpoint determinations on materials of this type are required by certain regulations and scientific standards to be performed using a Pensky-Martens type closed cup test method. This method indicates a flash point greater than 93.3 C (200 F). Although there was no flashpoint detected below 93.3 C (200 F) by the Pensky-Martens Closed Tester method, some flammable vapors were evolved during the test as evidenced by the enlargement of the test flame; therefore, caution should be exercised during storage and handling.

Storage Temperature:
Room temperature
Reason: Integrity.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:
Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

Respiratory Protection:
Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure.

Eye Protection:
Wear eye/face protection such as chemical splash proof goggles or face shield. Eyewash equipment and safety shower should be provided in areas of potential exposure.

Skin Protection:
Avoid skin contact. Wear impermeable gloves and suitable protective clothing.

Additional Advice:
Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	grayish-white
Appearance:	emulsion
Odor:	ammonia
Boiling Point:	~80.6 -126.7 °C 177 -260 °F
Melting Point:	-18 °C -0 °F
Vapor Pressure:	Not available
Specific Gravity/Density:	~1.0
Vapor Density:	Not available
Percent Volatile (% by wt.):	64 -65

pH:	6.0 -8.0in water
Saturation In Air (% By Vol.):	Not available
Evaporation Rate:	Not available
Solubility In Water:	Limited by viscosity
Volatile Organic Content:	22 % (g/g)
Flash Point:	>93 °C 200 °F Closed Cup
Flammable Limits (% By Vol):	Not available
Autoignition Temperature:	Not available
Decomposition Temperature:	Not available
Partition coefficient:	Not available
Odor Threshold:	Not available

10. STABILITY AND REACTIVITY

Stability: **Stable**

Conditions To Avoid: Avoid contact with strong oxidizing agents.

Polymerization: **Will not occur**

Conditions To Avoid: None known

Materials To Avoid: **Strong oxidizing agents.**

Hazardous Decomposition Products: **carbon dioxide**
carbon monoxide
ammonia oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

Toxicological information for the product is found under Section 3. HAZARDS IDENTIFICATION. Toxicological information on the regulated components of this product is as follows:

Petroleum distillates, hydrotreated light (CAS# 64742-47-8) has acute oral (rat) and dermal (rabbit) LD50 values of >5 g/kg and >3.16 g/kg, respectively. Prolonged or repeated skin contact tends to remove skin oils, possibly leading to irritation and dermatitis. Direct contact may cause eye irritation. Overexposure to high vapor concentrations, >~700 ppm, are irritating to the eyes and respiratory tract and may cause headaches, dizziness, drowsiness, and other central nervous system effects, including death. Aspiration of minute amounts during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death. In a 90-day oral gavage (rats) study at 100, 500, or 1000 mg/kg, no treatment-related mortalities were observed. There were no significant changes in body weights or food consumption in any dose groups. Increased liver weights were observed in male and female rats a 500 and 1000 mg/kg. Increased kidney weights were observed only in male rats at 500 and 1000 mg/kg. Testes weights were significantly elevated in male rats at 1000 mg/kg. Kidney effects, indicative of light hydrocarbon nephropathy, occurred in male rat kidneys at all dose levels. Histological findings of hepatocellular hypertrophy were seen in the livers of male rats at 1000 mg/kg and in female rats at 500 and 1000 mg/kg. All treatment-related effects were reversible within the 4-week recovery period. Observed kidney effects (including light hydrocarbon nephropathy and increased kidney weight) are a unique response by male rats to chronic hydrocarbon exposure, which the U.S. EPA has declared `not relevant to humans`. High-dose liver effects (including hepatocellular hypertrophy, or enlarged liver cells) are a direct consequence of the sustained high-fat `hydrocarbon diet`. The No Observed Adverse Effect Level (NOAEL) for this study was 1000 mg/kg.

Alcohols (C10-16), ethoxylated toxicological properties have not been fully investigated. Based on similar materials, the acute oral (rat) LD50 is estimated to range from 1600 - 2500 mg/kg and the acute dermal

(rabbit) LD50 value is estimated to be >2000 mg/kg. Similar materials produced severe eye irritation and moderate skin irritation in studies with rabbits.

C12-14 alcohol ethoxylated toxicological properties have not been fully investigated. The oral LD50 (rat) of this mixture is expected to be consistent with the chemical family of ethoxylated alcohol surfactants, and range from 1.6 to 2.5 g/kg. The acute dermal (rabbit) LD50 value is estimated to be > 2.0 g/kg. One expected component of this mixture was severely irritating to rabbit eyes (undiluted, Draize score = 60). This mixture is expected to be moderately irritating to skin, based on data reported for C9-C11 6EO: (primary irritation index) PII = 5.3/8.

Alcohols (C12-16), ethoxylated toxicological properties have not been fully investigated. Based on similar materials, the acute oral (rat) LD50 is estimated to range from 1600 - 2500 mg/kg and the acute dermal (rabbit) LD50 value is estimated to be >2000 mg/kg. Similar materials produced severe eye irritation and moderate skin irritation in studies with rabbits.

Secondary ethoxylated alcohols may cause moderate to severe eye and moderate skin irritation upon direct contact. May be absorbed through the skin in harmful amounts after prolonged or widespread exposure. Ingestion may cause irritation of the mouth and throat, abdominal discomfort, nausea, vomiting and diarrhea. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury.

California Proposition 65 Warning (applicable in California only) - This product contains (a) chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

12. ECOLOGICAL INFORMATION

This material is not classified as dangerous for the environment. Acute toxicity tests conducted on the polymer using environmentally representative water gave the following results:

ALGAE TEST RESULTS

Test: Acute Alga Toxicity, seawater (ISO 10253)
Duration: 72 hr
Species: Marine Algae (Skeletonema costatum)
~27 mg/l IC50

Test: Growth Inhibition (OECD 201)
Duration: 72 hr.
Species: Green Algae (Selenastrum capricornutum)
>100 mg/l IC50 Information based on a structurally similar material.

FISH TEST RESULTS

Test: Acute toxicity, freshwater (OECD 203)
Duration: 96 hr.
Species: Zebra Fish (Brachydanio rerio)
>100 mg/l LC50 Information based on a structurally similar material

INVERTEBRATE TEST RESULTS

Test: Acute Invertebrate Toxicity, seawater (PARCOM)
Duration: 10 day
Species: Marine Amphipod (Corophium volutator)
857 mg/l EC50

Test: Acute Invertebrate Toxicity, seawater (PARCOM)
Duration: 48 hr
Species: Marine Copepod (Acartia tonsa)
7.4 mg/l EC50

Test: Acute Immobilization (OECD 202)
Duration: 48 hr
Species: Water Flea (Daphnia magna)
>100 mg/l EC50 Information based on a structurally similar material

DEGRADATION

Test: CO2 Evolution: Modified Sturm (OECD 301B)
The polymeric ingredient is not readily biodegradable. The large polymer size is incompatible with transport across biological membranes and diffusion; the bioconcentration factor is therefore considered to be zero.

Test: Seawater Shake Flask Method (OECD 306)
Duration: 28 day
Procedure: Biodegradability in seawater
13 %

13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the Fritz-Pak product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA 'listed hazardous waste' or has any of the four RCRA 'hazardous waste characteristics'. Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA `listed hazardous waste`; information contained in Section 15 of this MSDS is not intended to indicate if the product is a `listed hazardous waste.`RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 2 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. Fritz-Pak encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. Fritz-Pak recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. Fritz-Pak has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT

Proper Shipping Name: Not applicable/Not regulated
Hazardous Substances: Not applicable

TRANSPORT CANADA

Proper Shipping Name: Not applicable/Not regulated

ICAO / IATA

Proper Shipping Name: Not applicable/Not regulated
Packing Instructions/Maximum Net Quantity Per Package:
Passenger Aircraft: -
Cargo Aircraft: -

IMO

Proper Shipping Name: Not applicable/Not regulated

15. REGULATORY INFORMATION

INVENTORY INFORMATION

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

European Union (EU): All components of this product are included on the European Inventory of Existing Chemical Substances (EINECS) or are not required to be listed on EINECS.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances (AICS).

China: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

Japan: All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese inventory.

Korea: All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.

Philippines: All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

This product does not contain any components regulated under these sections of the EPA

PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA

- Acute

16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)

Health:	2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
Fire:	1 - Materials that must be preheated before ignition can occur.
Reactivity:	0 - Materials that in themselves are normally stable, even under fire exposure conditions.

Reasons For Issue: Revised Section 9