MATERIAL SAFETY DATA SHEET 2365

MSDS REC'D by Trane March 20, 2001

SECTION 1 CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: ServiceFirst Safety Solvent Degreaser
Product Number(s): CHM00029
Product Use: Metal degreasing

Date Prepared Mar. 19, 2001
Replaces Jul. 08, 1997

Company Name: North American Research Corporation
P.O. Box 1318
Lewisville, TX 75067

Telephone Numbers: (972) 492-1800, (800) 527-7520, Fax (972) 394-6755
Emergencies: Infotrac (800) 535-5053 (24 hours, everyday)

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

OSHA Hazardous Components (29 CFR 1910.1200):

	CAS Registry No.	OSHA PEL	ACGIH TLV	Other Limits	% (Optional)
Tetrachloroethylene	127-18-4	100 ppm	25 ppm	100 ppm STEL/C	100

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

A dense, nonflammable, colorless, clear liquid with a mildly sweet odor.
WARNING! Harmful if inhaled. Can cause skin and eye irritation.
POSSIBLE CANCER HAZARD. May cause cancer based on animal data.

POTENTIAL HEALTH EFFECTS

INHALATION

Inhalation is the major potential route of exposure. Exposure to high concentrations of vapor mist can cause central nervous system depression with symptoms of headache, dizziness, stupor, loss of consciousness or death depending on concentration and duration of exposure. Exposure to high concentrations can cause irregular heartbeat, cardiac arrest and death. Overexposure has been shown to cause adverse effects on the lungs, liver, kidney, nervous system and other internal organs.

SKIN

Prolonged or repeated contact of liquid can cause irritation, defatting of skin, and dermatitis. Prolonged single exposure can result in progressively severe burning and redness. May be absorbed through the skin and cause adverse health effects as described in the INHALATION section above.

EYE

Liquid in eyes produces pain and irritation with mild temporary damage possible. Vapor can irritate eyes.

INGESTION

Single dose toxicity is moderate and causes severe gastrointestinal irritation with nausea, vomiting, stomach cramps, and diarrhea likely. Ingestion or vomiting can result in aspiration into the lungs which can cause chemical pneumonia and systemic effects. Ingestion can also cause adverse health effects as described in the INHALATION section above.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Acute and chronic liver and kidney disease, rhythm disorders of the heart, and neuritis. Exposure can result in cardiac sensitization and increase the risk of cardiac arrest.

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY

Consumption of alcoholic beverages may increase the potential for development of toxic effects resulting from exposure to this product.

CHRONIC EFFECTS

Prolonged overexposure has caused toxic effects on the liver and kidneys, and has caused cancer in certain laboratory animal tests. IARC has classified Tetrachloroethylene in Group 2A as a substance considered probably carcinogenic to humans. Tetrachloroethylene appears on the NTP carcinogen list.

SECTION 4 FIRST AID MEASURES

INHALATION: Remove to fresh air. If breathing has stopped, administer artificial respiration. Contact physician or emergency medical facility immediately.

SKIN: Remove contaminated clothing and shoes. Wash contact area with soap and water for at least 15 minutes. Get prompt medical attention. Wash clothing before reuse.

EYES: Immediately flush eyes with large amounts of water for at least 15 minutes while frequently lifting the upper and lower eyelids. If irritation persists, call a physician.

INGESTION: DO NOT induce vomiting. Contact a physician or emergency medical facility immediately. Never give anything by mouth to an unconscious person.

SECTION 5 FIRE-FIGHTING MEASURES

FLASHPOINT: None METHOD: TCC FLAMMABLE LIMITS: LEL: None UEL: None

AUTOIGNITION TEMP: None

EXTINGUISHING MEDIA: Nonflammable, use agent suitable for surrounding fire

HAZARDOUS COMBUSTION PRODUCTS: Hydrogen chloride, phosgene, chlorine.

FIRE FIGHTING INSTRUCTIONS

Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Use flooding quantities of water as fog or spray to keep fire-exposed containers cool.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Evacuate the area, ventilate, and avoid breathing vapors. Wear appropriate personal protective equipment (see section 8). Dike area to contain spill. If spill occurs indoors, turn off heating and/or air conditioning systems to prevent vapors from contaminating entire building. Clean up area by mopping with absorbent material and transfer to closed containers for disposal. Avoid contamination of ground and surface waters. Do not flush to sewer. All spills or leaks of this material must be handled and disposed of in accordance with local, state, and federal regulations.

Notify National Response Center at (800) 424-8802, and any state and local agencies as applicable, of uncontained releases to the environment in excess of the EPA reportable quantity (RQ). See Section 15 for regulatory information.

For all transportation accidents, call INFOTRAC at (800) 535-5053

SECTION 7 STORAGE AND HANDLING

STORAGE CONDITIONS:

Store in labeled, sealed containers in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Do not remove or deface label. Prevent water or moist air from entering containers. Do not reuse containers. Aluminum equipment should not be used for storage and/or transfer.

HANDLING PROCEDURES:

Avoid contact with skin and avoid breathing vapors. Do not eat, drink, or smoke in work area. Wash hands before eating, drinking, or using the restroom. Any clothing or shoes which become contaminated should be removed immediately and thoroughly washed before wearing again.

Carefully monitor handling, use, and storage to avoid spills and leaks. Follow protective controls set forth in Section 8. Do not use in poorly ventilated or confined spaces. Vapors are heavier than air and will collect in low areas.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS: See section 2.

RESPIRATORY PROTECTION:

A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the TWA/TLV's listed. Wear NIOSH/MSHA approved respirator where required.

EYE PROTECTION:

Wear safety glasses, chemical splash goggles, and/or face shield (ANSI Z87.1 or approved equivalent).

HAND PROTECTION:

Wear solvent resistant gloves such as Viton, polyvinyl alcohol, or equivalent.

OTHER PROTECTION:

Use chemically resistant apron or other impervious clothing to avoid skin contact.

ENGINEERING CONTROLS (Ventilation):

Use in a well ventilated area. Do not use in confined spaces. Local, mechanical exhaust may be necessary.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Colorless, clear liquid; mildly sweet odor.

SPECIFIC GRAVITY: 1.62 @ 25/25°C

VAPOR PRESSURE: 13 mm Hg @ 20°C/68°F

VAPOR DENSITY: 5.8 (Air = 1)

SOLUBILITY IN WATER: 0.015 gm/100 gm @ 25°C

pH: Not applicable

BOILING POINT: 250°F (121.1°C)

EVAPORATION RATE (Butyl Acetate = 1): 0.1

VOLATILES, % BY VOLUME: 100

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Ignition sources (sparks, open flame, heated surfaces).

INCOMPATIBILITY (Materials to Avoid): Strong oxidizers, barium, lithium.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride, phosgene, chlorine.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

INHALATION

100 ppm for 7 hours causes mild irritation to eyes, nose, and throat; flushing of face and neck; headache, slurred speech and drowsiness. 200 ppm for 1 hour causes the same symptoms, plus dizziness and light headedness. 600 ppm for 10 minutes causes sensation of numbness around mouth, dizziness, and incoordination; 2,000 ppm causes mild narcosis within 5 minutes. 5,000 ppm cannot generally be tolerated and causes vertigo, nausea, and mental confusion. Unconsciousness or death can occur at extremely high concentrations or on prolonged exposures above 500 ppm.

ANIMAL TOXICOLOGY

Inhalation LC_{50}:	> 2,000 ppm – 4 hours (rat)
Dermal LD_{50}:	> 10 g/kg (rabbit)
Oral LD_{50}:	> 5,000 mg/kg (rats)

CHRONIC TOXICITY

The International Agency for Research on Cancer (IARC) has concluded that with respect to tetrachloroethylene, there is sufficient evidence of carcinogenicity to experimental animals, and limited evidence of carcinogenicity to humans, resulting in a classification in Group 2A as a substance probably carcinogenic to humans. The NTP has identified tetrachloroethylene as an animal carcinogen. ACGIH classifies tetrachloroethylene as an A3 – Animal Carcinogen.

SECTION 12 ECOLOGICAL INFORMATION

Acute LC_{50} (96 hours) for Fathead Minnow:	15.7 ppm
Acute LC_{50} (96 hours) for Bluegill:	12.9 ppm
Acute LC_{50} (96 hours) for Mysid:	10.2 ppm
Acute LC_{50} (96 hours) for Sheepshead Minnow	29.4 – 52.2 ppm

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in accordance with federal, state, and local regulations. Waste characterization and compliance with disposal regulations are the responsibilities of the waste generator.

SECTION 14 TRANSPORT INFORMATION

U.S. Department of Transportation:

Tetrachloroethylene, 6.1, UN1897, PG III

SECTION 15 REGULATORY INFORMATION

TSCA: All components of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA: RQ 100 lbs.

SARA TITLE III:

Section 311/312 Hazard Category: Acute: Yes Chronic: Yes Fire: No Pressure: No Reactive Hazard: No

Section 313 Reportable Ingredients: Tetrachloroethylene (127-18-4)

CALIFORNIA (Proposition 65):

The State of California has listed tetrachloroethylene under Prop 65 as a chemical known to the state to cause cancer.

SECTION 16 OTHER INFORMATION

NFPA RATING: Health – 2, Flammability – 0, Reactivity – 0

HMIS® RATING: Health – 2, Flammability – 0, Reactivity – 0

HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint and Coatings Association (NPCA). HMIS® materials may be purchased exclusively from Labelmaster, 1-800-621-5808.