

# MATERIAL SAFETY DATA SHEET

**MSDS IDENTIFICATION NAME:** Tyfo® SCH-41S  
**MSDS NUMBER:** TYFO-SCH-41S-001

**DATE:** 04/06/10 **PAGE:** 1 OF 5  
**SUPERSEDES:** 05/25/2000

## SECTION I: MATERIAL AND MANUFACTURER IDENTIFICATION

**MANUFACTURER:**  
FYFE CO. LLC  
8380 Miralani Drive, Suite A  
San Diego, CA 92126

**EMERGENCY TELEPHONE NUMBER:**  
800-424-9300 or 703-527-3887  
**INFORMATION TELEPHONE NUMBER:**  
Tel: 858-642-0694 Fax: 858-444-2982

**PRODUCTION IDENTIFICATION NUMBER:** Tyfo® SCH-41S  
**CHEMICAL FAMILY:** Carbon Fiber , Aramid Fiber

## SECTION II: OSHA REGULATED COMPONENTS

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200).

MATERIAL OR COMPONENT	CAS NUMBER	% BY WEIGHT	OSHA(PEL)	ACGIH(TLV)
CARBON FIBER	7440-44-0	90-96	15 mg/m <sup>3</sup> (Total) 5 mg/m <sup>3</sup> (Respirable)	15 mg/m <sup>3</sup> (Total) 3 mg/m <sup>3</sup> (Respirable)
ARAMID FIBER	26125-61-1	4-8	Not Determined	Not Determined
POLYMER SIZING	25036-25-3	2-4	Not Determined	Not Determined
WATER, ABSORBED	7732-18-5	<3		
SODIUM SULFATE	7757-82-6	<1		

## SECTION III: HAZARD IDENTIFICATION

**EMERGENCY OVERVIEW:** No unusual conditions are expected from this product.

**APPEARANCE AND ODOR:** Resin-coated black carbon fibers woven with yellow aramid fibers into fabric of varying weight and thickness, depending on the style, with no distinctive odor.

### STATEMENTS OF HAZARD:

**CARBON MATERIAL IS ELECTRICALLY CONDUCTIVE. ELECTRICAL SYSTEMS SHOULD BE PROTECTED FROM EXPOSURE TO AIRBORNE FIBER.**

**DUST PARTICLES ASSOCIATED WITH THIS PRODUCT MAY CAUSE IRRITATION OF THE SKIN, EYES, OR UPPER RESPIRATORY TRACT.**

### PRIMARY ROUTES OF EXPOSURE:

EYES--YES      SKIN CONTACT--YES      INHALATION--NO      INGESTION--NO

### HMIS RATING:

CARBON:	HEALTH--1	FLAMMABILITY--0	REACTIVITY--0	SPECIAL—NONE
ARAMID:	HEALTH--0	FLAMMABILITY--1	REACTIVITY--0	SPECIAL—NONE
SIZING:	HEALTH--1	FLAMMABILITY--1	REACTIVITY--0	SPECIAL—NONE

**SECTION III: HAZARD IDENTIFICATION (CONTINUED)****POTENTIAL HEALTH EFFECTS:**

EYES: Low hazard. Fiber fly and dust may cause temporary irritation.

SKIN: Low hazard for usual industrial or commercial production. Continual rubbing of fibers on the skin may cause irritation.

INHALATION: In some cases – see Section VII. Fiber dust and fly from processing may be breathed into nose and throat. Working unprotected in dusty conditions may cause upper respiratory irritation and cold-like symptoms.

INGESTION: Ingestion unlikely under normal use. May cause gastrointestinal irritation.

**SIGNS AND SYMPTOMS OF EXPOSURE:** Possible Rash.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** None known

**SECTION IV: FIRST AID MEASURES**

**SKIN CONTACT:** To relieve skin irritation, wash with soap and water. Avoid rubbing or scratching.

**EYE CONTACT:** Flush eyes with water for at least 15 minutes. Avoid rubbing or scratching.

**INHALATION:** Remove to fresh air. Treat any irritation symptomatically, contact a physician.

**INGESTION:** Ingestion very unlikely.

With all contact, get medical attention if irritation persists.

**SECTION V: FIRE FIGHTING MEASURES**

**FLASH POINT/METHOD OF DETERMINATION:** N/A. Not Flammable.

**FLAMMABILITY LIMITS:** N/A

**EXTINGUISHING MEDIA:** Normal firefighting procedures. Carbon dioxide, dry chemical, water spray.

**SPECIAL FIREFIGHTING PROCEDURES:** Wear self-contained breathing apparatus. Keep personnel removed and upwind of fire. Wear full protective equipment.

**USUAL FIRE AND EXPLOSION HAZARDS:** Carbon fiber may be released in a fire situation, and the fibers are sufficiently conductive to cause severe electrical problems. Burning of carbon and aramid normally stops when ignition source is removed. Pulp and dust may continue to smolder once ignited. Carbon or aramid fiber dust does not present explosion hazards.

**SECTION VI: ACCIDENTAL RELEASE MEASURES**

**PROCEDURES IN CASE OF ACCIDENTAL RELEASE OR LEAKAGE:** Review firefighting procedures and Handling sections before proceeding with clean up. Fiber is not biodegradable; do not flush to drains. Avoid the use of dry sweeping or air jet blowing of fibers and dust, which can re-suspend respirable dust in the air.

### SECTION VII: HANDLING AND STORAGE

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:** Store in a cool, dry place. Maintain seal against contamination from dirt and moisture. Do not store in direct sunlight. Avoid drying of aramid to less than 4% moisture.

**OTHER PRECAUTIONS:** Protect all electrical equipment, in or near areas in which fiber is handled or used, from contact with airborne particles and filaments to avoid possible damage caused by electrical shorts. Airborne particles and filaments should be controlled so as to minimize (1) skin irritation, (2) electrical shorts in switch gear, etc. due to conductivity of fiber.

### SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

**EYE/FACE PROTECTION:** Safety glasses

**SKIN PROTECTION:** Recommended disposable protective garments to eliminate possible skin irritation. Clothing should protect the base of the neck, legs and arms. Protective gloves (rubber).

**RESPIRATORY PROTECTION:** Personal dust respirators applicable if high degree of fiber fly is experienced. NIOSH approved nuisance dust masks.

**VENTILATION:** Adequate ventilation should be provided at points where product is handled. Skin contact should be minimized through process design or protected with the use of protective clothing, eye protection and work gloves.

**GENERAL HYGIENE RECOMMENDATIONS:** Before eating, drinking, smoking or using toilet facilities, wash face and hands thoroughly with soap and water. Do not consume food or drinks in areas where they may be contaminated with this material.

### SECTION IX: PHYSICAL & CHEMICAL PROPERTIES

<b>APPEARANCE AND ODOR</b>	Black, odorless
<b>BOILING POINT (°F/°C)</b>	N/A
<b>MELTING POINT (°F/°C)</b>	N/A
<b>SPECIFIC GRAVITY ( WATER=1)</b>	1.7-1.8
<b>VAPOR PRESSURE (MM Hg.)</b>	N/A
<b>VAPOR DENSITY (AIR-1)</b>	N/A
<b>% VOLATILE (BY WEIGHT)</b>	<2
<b>EVAPORATION RATE (Butyl Acetate = 1):</b>	N/A
<b>SOLUBILITY IN WATER</b>	Negligible (Dispersible)

### SECTION X: STABILITY AND REACTIVITY

**STABILITY:** Stable under normal handling and storage conditions.

**INCOMPATIBLE MATERIALS:** Exposure to electrical equipment and circuitry. Avoid contact with strong oxidizing agents.

**PRODUCTS EVOLVED FROM HEAT OF COMBUSTION OR DECOMPOSITION:** Oxides of carbon and nitrogen. Sizing may boil off as a fume which should be vented.

**HAZARDOUS POYMERIZATIONS:** Will not occur under normal conditions of use.

**SECTION XI: TOXICOLOGICAL INFORMATION****MATERIAL OR COMPONENT TOXICITY DATA:** N/A**SECTION XII: ECOLOGICAL INFORMATION**

No ecological data has been determined.

**SECTION XIII: DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL METHODS:** Industrially approved landfill. It is the responsibility of the generator to comply with all federal, state, provincial and local laws and regulations. We recommend that you contact an appropriate waste disposal contractor and environmental agency for relevant laws and regulations. Under the US, Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification and to assure proper disposal.

**SECTION XIV: TRANSPORTATION INFORMATION****DOT AND IATA:**

PROPER SHIPPING NAME	Not Applicable
HAZARD CLASS	Not Applicable
UN/NA	Not Applicable
DOT HAZARDOUS SUBSTANCE	Not Applicable
LABEL REQUIRED	Not Applicable

**SECTION XV: REGULATORY INFORMATION****SARA TITLE III:****SECTION 311 HAZARDOUS CATEGORIZATION:**

Not Applicable

**ALL MATERIALS OR COMPONENTS OF THIS PRODUCT ARE EITHER LISTED OR ARE NOT REQUIRED TO BE LISTED IN THE EPA TSCA INVENTORY**

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

**SECTION XVI: OTHER INFORMATION**

**SPECIAL PRECAUTIONS:** Empty containers will retain some of the product residue. When handling or disposing of them, follow all label warnings, other instructions and waste disposal procedures.

**EXPLANATION AND DISCLAIMER:** Wherever such words or phrases as "hazardous," "toxic," "carcinogen," etc. appear herein, they are used as defined or described under state employee right-to-know laws, Federal OSHA laws or the or the direct sources for these laws such as the International Agency for Research on Cancer (ISRC), the National Toxicology Program (NTP), etc. The use of such words or phrases should not be taken to mean that we deem or imply any substance or exposure to be toxic, hazardous or otherwise harmful. ANY EXPOSURE CAN ONLY BE UNDERSTOOD WITHIN THE ENTIRE CONTEXT OF ITS OCCURRENCE, WHICH INCLUDES SUCH FACTORS AS THE SUBSTANCE'S CHARACTERISTICS AS DEFINED IN THE MSDS, AMOUNT AND DURATION OF EXPOSURES, OTHER CHEMICALS PRESENT AND PREEXISTING INDIVIDUAL DIFFERENCES IN RESPONSE TO THE EXPOSURE.

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APPROVED AND AUTHORIZED BY: *Edward R. Fyfe*