



## MSDS *Material Safety Data Sheet*

1.4.2010

8 Pages

*MSDS Number FP-511-BK*

### 1.0 Product and Company Identification

**Manufacturer:**

OTS Manufacturing and Supply, Inc.  
293 Industrial Drive  
Lexington, SC 29072

**Contact: Ron Wilson**

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Email: [Ron@otscompany.com](mailto:Ron@otscompany.com)

**Emergency Contact:** INFOTRAC 800-535-5053

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**Product Name:** FP-511 Structural Spray - Black  
**Revision Date:** 12.15.09  
**MSDS Number:** FP-511-BK  
**Chemical Family:** Aromatic Isocyanate Prepolymer Based One Component Spray Coating

This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. Transportation Emergency phone number: INFOTRAC 800 535-5053

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### 2.0 Hazards Identification

**Route of Entry:** Inhalation, eye and skin contact.

**Target of Organs:** Skin; eyes; respiratory system.

**Inhalation:** Vapor or mists irritate the nose and throat. Inhalation of higher concentrations may cause headache, nausea, fatigue, narcosis and loss of appetite.

**Skin Contact:** Repeated or prolonged skin contact can result in dry, defatted skin. Irritation with redness and swelling may develop into dermatitis.

**Eye Contact:** Liquids, aerosols or vapors are irritating and can cause tearing, reddening, and swelling. If left untreated, corneal damage can occur and injury is slow to heal. Damage is usually reversible.

**Ingestion:** Swallowing can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

### 3.0 Composition/Information on Ingredients

#### Ingredients:

CAS #	Chemical Name	Percent
25214635	1,2-Ethanediamine, polymer with methylox	25-35%
Proprietary	Polyester Polyol	10-20%
64742956	Aromatic hydrocarbon	10-20%
101688	4,4-Methylenediphenyl diisocyanate	10-15%
26447405	Benzene, 1,1'-methylenebis[isocyanato-	5-10%
May contain the following depending upon color:		
1309371	Ferric Oxide	5-10%
1317619	Iron Oxide (Fe <sub>3</sub> O <sub>4</sub> )	5-10%
1333864	Carbon Black	1-2%

OSHA Regulatory Status: This MSDS Contains valuable information critical to the safe handling and proper use of this product. This MSDS should be retained and available for employees and other users of this product.

### 4.0 First Aid Measures

**Inhalation:** Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Consult physician should this occur.

**Skin Contact:** Remove contaminated clothing. Wash affected skin thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For severe exposures get under safety shower after removing clothing, then get medical attention. For lesser exposure, seek medical attention if irritation develops or persists after the area is washed.

**Eye Contact:** Flush with copious amounts of lukewarm water for at least 15 minutes, holding eyelids open at all times. Refer individual to physician or ophthalmologist for immediate follow-up.

**Ingestion:** DO NOT INDUCE VOMITING. Give 1 to 2 cups of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Get prompt, qualified medical attention. Ingestion may result in vomiting. If vomiting occurs spontaneously, do not allow vomit to be breathed into the lungs as even a small quantity in the lungs may result in aspiration pneumonia.

### 5.0 Fire Fighting Measures

**Flash Point:** 118.4 Degrees F (48 Degrees C)  
**Flash Point Method:** Tag Closed Cup (ASTM D-56)  
**LEL:** 0.9%  
**UEL:** 7.0%

Dry powder, foam, carbon dioxide.

Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. Use cold water spray to cool fire exposed containers to minimize risk of rupture. Closed containers may explode when exposed to extreme heat. Solvent vapors may be heavier than air. Under conditions of stagnant air, vapors may build up and travel along the ground to an ignition source which may result in flash back to the source of the vapors.

## 6.0 Accidental Release Measures

Extinguish all ignition sources and ensure that all handling equipment is electrically grounded. For small spills or drips, mop or wipe up and dispose of in approved waste containers. For large spills contain by diking with soil or other non combustible absorbent materials and then put into approved waste containers; or absorb with non combustible material, place residue in approved waste containers. Keep out of sewers, storm drains, surface waters and soil. Comply with all applicable governmental regulations on spill reporting and handling and disposal of waste. Respiratory protection is recommended during spill clean-up.

## 7.0 Handling and Storage

**Handling Precautions:** Avoid breathing vapors or mist; Avoid contact with eyes, skin or clothing: Do not expose containers to open flame, excessive heat, or direct sunlight. Do not puncture or drop containers. Wash thoroughly after handling.

**Storage Requirements:** Keep away from heat, sparks, and flames; store in cool / dry area; if container exceeds boiling point, cool the container before opening. Vent containers frequently and more often in warm weather.

## 8.0 Exposure Controls/Personal Protection

**Engineering Controls:** Educate and train employees in safe use of this product. All ventilation should be designed in accordance with OSHA Standard 29 CFR 1910.94.

**Protective Equipment:** An air-purifying respirator equipped with organic cartridges or a canister and dust filters are required. However, due to the poor warning properties of this product, proper fit must be ensured. Observe OSHA regulations for respirator use (29CFR 1910.134). Chemical resistant gloves (butyl or nitrile rubber). Cover as much of the exposed area as possible with appropriate clothing. If skin crèmes are used, keep the area covered only by the cream to a minimum. Chemical goggles unless a full face respirator is also worn. It is generally recognized that contact lenses should not be worn when working with chemicals because the lenses may contribute to the severity of the eye injury.

**Exposure Guidelines / Other:** EXPOSURE LIMITS:

USA OSHA (TWA / PEL):	0.02 PPM
NIOSH (TWA):	0.005 ppm
IDLH:	75 mg/m3
NIOSH (C 10 min):	0.02 ppm

Exposure limits for Aromatic Petroleum distillates  
OSHA PEL: 400 ppm

## 9.0 Physical and Chemical Properties

<b>Appearance:</b>	Pigmented Liquid	<b>Boiling Point:</b>	Not established
<b>Physical State:</b>	Liquid	<b>Freezing/Melting Pt:</b>	Below 32F Not established
<b>Odor:</b>	Of Solvent	<b>Solubility:</b>	Insoluble
<b>pH:</b>	N.A.	<b>Spec Grav./Density:</b>	1.08 @ 77 F
<b>Vapor Pressure:</b>	Not Established		
<b>Vapor Density:</b>	Not Established		
<b>VOC:</b>	223 g/L		
<b>Bulk Density:</b>	9.2 lbs/gal		

## 10.0 Stability and Reactivity

<b>Stability:</b>	Product is stable under normal conditions.
<b>Conditions to avoid:</b>	Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, or calcium hypochlorite
<b>Materials to avoid (incompatibility):</b>	Strong oxidizing agents.
<b>Hazardous Decomposition products:</b>	By Fire and High heat- Carbon dioxide (CO <sub>2</sub> ) Carbon monoxide (CO), aldehydes, and phenolics, dense black smoke, Other undetermined compounds.
<b>Hazardous Polymerization:</b>	Will not occur.

## 11.0 Toxicological Information

**Acute Eye Effects:** Liquid, aerosol or vapors are irritating and can cause tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. Damage is usually irreversible. See Section VI for treatment.

**Acute Skin Effects:** Isocyanates react with skin protein and moisture and can cause eruption which may include the following symptoms> reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove.

**Acute Inhalation Effects:** Vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucus membranes in the respiratory tract (nose, throat and lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Individuals with a preexisting, non specific bronchial hyper-reactivity can respond to concentrations below the TLV with similar symptoms as well as asthma attack. Exposure well above the TLV may lead to bronchitis, bronchial spasm and pulmonary edema (fluid on the lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis with flu like symptoms (e.g., fever and chills) has also been reported. These symptoms can be delayed up to several hours after exposure.

**Acute Ingestion Effects:** Can result in irritation and corrosive action in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.

**Chronic Eye Effects:** None Found

**Chronic Skin Effects:** Prolonged contact can cause reddening, swelling, rash, scaling, blistering, and in some cases, skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms as a result of contact with very small amount of liquid material or as a result of exposure to vapor.

**Chronic Inhalation Effects:** As a result of previous repeated overexposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. These symptoms which can include chest tightness, wheezing, coughing, shortness of breath or asthma attack, could be immediate or delayed up to several hours after exposure. Similar to many non-specific asthmatic responses, there are reports that once sensitized, an individual can experience these symptoms upon exposure to dust, cold air or other irritants. This increased lung sensitivity can persist for weeks and in sever cases for several years. Overexposure to isocyanates has also been reported to cause lung damage, including decrease in lung function, which may be permanent. Sensitization can either be temporary of permanent.

Chronic Ingestion Effects: None found

**POLYMERIC MDI:**

**Acute Oral Toxicity- LD50:** > 2,000 mg/kg (rat, male / female)

**Acute Inhalation Toxicity- LC50:** 490 mg/m<sup>3</sup>, vapor, 4 h (rat)

**Repeated dose toxicity:**

90 DAYS, INHALATION: NOAEL: 1 Mg/m<sup>3</sup>, rat male/female, 6 hr/ day, 5 day / week. Irritation to lungs and nasal cavity.

2 year inhalation: NOAEL: 0,2 mg/m<sup>3</sup>, rat male / female, 6 hr / day, 5 day / week. Irritation to lungs and nasal cavity.

**Mutagenicity:**

Genetic Toxicity in Vitro: Bacterial- gene mutation assay: negative (Salmonella typhimurium, metabolic activation: with / without)

**Carcinogenicity:**

Rat, male / female, inhalation, 2 years, 6 hrs / day 5 days / week- Exposure to a level of 6 mg/m<sup>3</sup> polymeric MDI was related t the occurrence of lung tumors. This level is significantly over the TLV for MDI.

**Developmental Toxicity / Teratogenicity:**

Rat male / female, gestation days, 6-15, 6 hr day, NOAEL (teratogenicity): 12 mg/m<sup>3</sup>, NAOEL (maternal),: 4 mg/m<sup>3</sup>. No teratogenic effects observed at doses tested. Fetotoxicity seen only with maternal toxicity.

**4,4'-MDI:**

**Acute Inhalation Toxicity- LC50:** 369 mg/m<sup>3</sup>, 4 hrs (rat, male / female)

LC50: > 2240 mg/m<sup>3</sup>, aerosol, 1 h (rat)

**Acute Dermal Toxicity- LD50:** > 10,000 mg/kg (rabbit)

**Skin Irritation:** Rabbit, Draize test, slightly irritating.

**Eye Irritation:** Rabbit, Draize test, slightly irritating.

**Sensitization:** Dermal: sensitizer (guinea pig, Maximization Tst (GPMT))

Inhalation: sensitizer (guinea pig)

**Repeated Dose Toxicity**

90 days, inhalation: NOAEL: 0.3mg/m<sup>3</sup>, (rat, male / female, 18 hrs / day, 5 days / week)  
Irritation to lungs and nasal cavity.

**Mutagenicity**

Genetic Toxicity in Vitro:

Ames: (Salmonella typhimurium, metabolic Activation: with / without)

Positive and negative results were reported. The use of certain solvents which rapidly hydrolyze diisocyanates is suspected of producing the positive mutagenicity results.

Genetic Toxicity in Vivo:

Micronucleus Assay: negative (mouse)

**Carcinogenicity**

Rat, female, inhalation, 2 years, 17 hrs / day, 5 days / week- negative

INHALATION, RAT: LC50 = 5000 PPM/4H; LD50 (ORAL, RAT) 4300 MG/KG.

CARCINOGENICITY: XYLENE (O-, M- P-ISOMERS): ACGIH: A4, NOT CLASSIFIABLE AS A HUMAN CARCINOGEN; IARC: GROUP 3 CARCINOGEN, EPIDEMIOLOGY, TERAGENISITY, REPRODUCTIONVE EFFECTS, NEWROTOXICITY, MUTAGENICITY, AND OTHER STUDIES: NO DATA AVAILABLE.

**12.0 Ecological Information**

**\*Ecological Data for 2,4-MDI:**

**Biodegradation:** 0%, Exposure time: 28 days

**Bioaccumulation:** Rainbow Trout, Exposure time, 112 D, < 1 BCF  
Does not bioaccumulate

**Acute and Prolonged Toxicity to Fish**

LC0: > 1,000 mg/l (zebra fish (Brachydanio rerio), 96 hours)

LC 0: > 3,000 mg/l (Killifish (Oryzias latipes), 96 h)

**Acute Toxicity to Aquatic Invertebrates**

EC50: > 1,000 mg/L (water flea (daphnia magna), 24 hrs.)

**Toxicity to Aquatic Plants**

NOEC: 1640 mg/L, End point: Growth (green algae (Scenedesmus subspicatus), 72 hrs)

**Toxicity to Microorganisms**

EC50: > 100 mg/L, (activated sludge microorganisms, 3 hrs)

**\*Additional Ecotoxicological Remarks: Ecotoxicity data based on Polymeric MDI**

**Ecological Data for 4,4'-MDI:**

**Acute and Prolonged Toxicity to fish**

LC50: > 500 mg/L (Zebra fish (Brachydanion rerio), 24 hrs.

**Acute Toxicity to Aquatic Invertebrates**

EC50: > 500 mg/L (water flea (Daphnia magna), 24 hrs.

**13.0 Disposal Considerations**

Waste and container disposal must be in accordance with federal, state, and local environmental control regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue. Decontaminate prior to disposal. **DO NOT HEAT OR CUT EMPTY CONTAINERS WITH ELECTRIC OR GAS TORCH.**

**14.0 Transport Information****DOT (HM-181; DOMESTIC SURFACE)**

PROPER SHIPPING NAME	Resin Solution
D.O.T. HAZARD CLASS:	3
UN / NA Number:	UN 1866
PACKAGING GROUP:	PG III
HAZARD LABEL (S)	Flammable Liquid, Marine Pollutant
HAZARD PLACARD	Flammable Liquid, Marine Pollutant

**ICAO/IATA (AIR)**

PROPER SHIPPING NAME:	Resin Solution
HAZARD CLASS DIVISION NUMBER:	3
UN NUMBER:	UN 1866
SUBSIDIARY RISK:	None
PACKING GROUP:	PG III
HAZARD LABEL(S):	Flammable Liquid
RADIOACTIVE?:	Non-radioactive
PASSENGER AIR-MAXIMUM QUAN:	60 L
PACKING INSTRUCTION NUMBER:	309
CARGO AIR - MAXIMUM QUANTITY:	220 L
PACKING INSTRUCTION NUMBER:	310

**IMO/IMDG CODE (OCEAN)**

PROPER SHIPPING NAME:	Resin Solution
HAZARD CLASS DIVISION NUMBER:	3
UN NUMBER:	UN 1866
PACKING GROUP:	PG III
HAZARD LABEL(S):	Flammable Liquid, Marine Pollutant
HAZARD PLACARD (S):	Flammable Liquid, Marine Pollutant

**15.0 Regulatory Information**

COMPONENT / (CAS/PERC) / CODES

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\*4,4'-methylenediphenyl diisocyanate (101688 10-15%) CERCLA, HAP, MASS, NJHS, OSHAWAC, PA, SARA313, TXAIR

Ferric Oxide (1309371 5-10%) MASS, OSHAWAC, PA, TXAIR  
Carbon black (1333864 1-2%) MASS, ASHAWAC, PA TSCA, TXAIR

TSCA: All components in this mixture are included in the TSCA Inventory.

REGULATORY KEY DESCRIPTIONS

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CERCLA = Superfund clean-up substance  
HAP = Hazardous Air Pollutants  
MASS = MA Massachusetts Hazardous Substances List  
OSHA = OSHA Workplace Air contaminants  
PA = PA Right to Know List of Hazardous Substances  
SARA313 = Sara 313 Title III Toxic Chemicals  
TXAIR = TX Air Contaminants with Health Effects Screening Level  
TSCA = Toxic Substances Control Act

**16.0 Other Information**

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