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## SECTION 1: IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

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### 1.1 Product identifiers

Product Name : ACS Material Fluorinated Carbon Nanotubes  
Brand : ACS Material LLC  
CAS-No. : 308068-56-6

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacturing of substances

### 1.3 Details of the supplier of the safety data sheet

Company : ACS MATERIAL LLC  
959 E Walnut St., Suite 100  
Pasadena, CA 91106  
USA  
Telephone : +1 (866)-227-0656  
Fax : +1 (781)-518-0284

### 1.4 Emergency telephone number

Emergency Phone #: +1 (866)-227-0656

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## SECTION 2: HAZARDS IDENTIFICATION

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### 2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

### 2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None.

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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### 3.1 Substances

Substance name : ACS Material Fluorinated Carbon Nanotubes  
CAS-No : 308068-56-6  
EC-No. : 231-153-3  
Synonyms : F-CNT  
Linear formula : C<sub>x</sub>F<sub>y</sub>

**Hazardous ingredients**

Components	Concentration	CAS No.
Carbon nanotubes	<50%	308068-56-6
Fluorine	48-58%	7782-41-4

For the full text of the phrases mentioned in this Section, see Section 16.

**Hazardous impurities:** None known.

**SECTION 4: FIRST AID MEASURES**

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**4.1 Description of first aid measures**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Flush eyes thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available.

**SECTION 5: FIREFIGHTING MEASURES**

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**5.1 Extinguishing media**

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture**

No data available.

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

**6.2** Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. For personal protection see section 8.

**Environmental precautions**

No special environmental precautions required.

**6.3 Methods and materials for containment and cleaning up**

Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

**SECTION 7: HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places

**7.2 Conditions for safe storage, including any incompatibilities**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Control parameters**

**Components with workplace control parameters**

Components	CAS-No.	Value	Control Parameters	Basis
Fluorinated Carbon Nanotubes	308068-56-6	TWA	15.000000 Million particles per cubic foot	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
	Remarks	Based on impinger samples counted by light-field techniques. mppcf X 35.3 = million particles per cubic meter = particles per c.c		

		TWA	2.500000 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		Also see specific listing for Graphene (synthetic).		
		TWA	15.000000 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	2.000000 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		Pneumoconiosis		
		TWA	2.5 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		Also see specific listing for Graphite (synthetic).		
		TWA	15Million particles per cubic foot	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
		Based on impinger samples counted by light-field techniques. mppcf X 35.3 = million particles per cubic meter = particles per c.c		
		TWA	2 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		Pneumoconiosis		
		PEL	10 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		PEL	5 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		PEL	2.5 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

## 8.2 Exposure controls

### Appropriate engineering controls

General industrial hygiene practice.

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal

technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Body Protection**

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**

No special environmental precautions required.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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**9.1 Information on basic physical and chemical properties**

1) Appearance	Form: powder Colour: black
2) Odour	No data available
3) Odour Threshold	No data available
4) pH	No data available
5) Melting point/freezing point	No data available
6) Initial boiling point and boiling range	No data available
7) Flash point	No data available
8) Evaporation rate	No data available
9) Flammability (solid, gas)	No data available
10) Upper/lower flammability or explosive limits	No data available
11) Vapour pressure	No data available
12) Vapour density	No data available
13) Relative density	No data available
14) Water solubility	No data available
15) Partition coefficient: n- octanol/water	No data available
16) Auto-ignition temperature	No data available
17) Decomposition temperature	No data available
18) Viscosity	No data available
19) Explosive properties	No data available
20) Oxidizing properties	No data available

**9.2 Other safety information**

No data available

**SECTION 10: STABILITY AND REACTIVITY**

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**10.1 Reactivity**

No data available.

**10.2 Chemical stability**

Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**

No data available

**10.4 Conditions to avoid**

No data available.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available.

In the event of fire: see section 5.

**SECTION 11: TOXICOLOGICAL INFORMATION**

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**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation**

No data available.

**Dermal**

No data available.

**Skin corrosion/irritation**

No data available.

**Serious eye damage/eye irritation**

No data available.

**Respiratory or skin sensitisation**

No data available.

**Germ cell mutagenicity**

No data available.

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is

identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

No data available.

**Specific target organ toxicity - single exposure**

No data available.

**Specific target organ toxicity - repeated exposure**

No data available.

**Aspiration hazard**

No data available.

**Additional Information**

RTECS: Not available.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**SECTION 12: ECOLOGICAL INFORMATION**

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**12.1 Toxicity**

No data available.

**12.2 Persistence and degradability**

No data available.

**12.3 Bioaccumulative potential**

No data available.

**12.4 Mobility in soil**

No data available.

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

**12.6 Other adverse effects**

No data available.

**SECTION 13: DISPOSAL CONSIDERATIONS**

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**13.1 Waste treatment methods**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

## **SECTION 14: TRANSPORT INFORMATION**

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### **UN number**

ADR/RID: - IMDG: - IATA: -

### **UN proper shipping name**

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IATA: Not dangerous goods

### **Transport hazard class(es)**

ADR/RID: - IMDG: - IATA: -

### **Packaging group**

ADR/RID: - IMDG: - IATA: -

### **Environmental hazards**

ADR/RID: no IMDG Marine pollutant: no IATA: no

### **Special precautions for user**

No data available.

## **SECTION 15: REGULATORY INFORMATION**

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### **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

#### **Authorisations and/or restrictions on use**

No data available.

#### **SARA 302 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### **SARA 313 Components**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### **California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

### **15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out.



**SECTION 16: OTHER INFORMATION**

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**Full text of H-Statements referred to under sections 2 and 3.**

**HMIS Classification**

Health hazard: 0

Chronic Health Hazard:

Flammability: 0

Physical Hazard: 0

**NFPA Rating**

Health hazard: 0

Fire Hazard: 0

Reactivity Hazard: 0

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