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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 Fullerene C60  
This SDS is valid for  
The products : Fullerenes C60-99.9wt%, Fullerenes C60-99.95wt%  
Fullerenes C60-99.5wt%, PolyhydroxyC60  
Product Number : FullereneC60  
Brand : ACS Material LLC  
CAS-No. : 131159-39-2

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

Identified uses : Laboratory chemicals, Synthesis of substances.

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

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

**1.4 Emergency telephone number**

Europe : 112 or 999  
Asia : 110 (China, Japan, Taiwan), 119  
North America : 911  
South America : 911  
Africa : As appropriate for your country  
Australia : 000 (Australia), 111 (New Zealand)

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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**

Slightly hazardous in case of skin contact(irritant), of eye contact(irritant), of ingestion, of inhalation.

The substance is toxic to upper respiratory tract. The substance maybe toxic to cardiovascular system. Repeated or prolonged exposure to the substance can produce target organs damage.

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

None.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

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**3.1 Substances**

Substance name : ACS Material Fullerene C60  
EC-No : 231-153-3  
CAS-No : 131159-39-2  
Linear formula : C<sub>60</sub>

**Hazardous components:** 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. If breathing is difficult, give oxygen. 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 with water as a precaution for at least 15 minutes and consult a physician.

**If swallowed**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**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**

SMALL FIRE : Use DRY chemical powder.  
LARGE FIRE : Use water spray, fog or foam. Do not use water jet.

## 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.

Fire Hazards in Presence of Various Substances : Slightly flammable to flammable in presence of open flames and sparks, of heat, of oxidizing materials.

Explosion Hazards in Presence of Various Substances: Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of moisture.

## 5.4 Further information

### Special Remarks on Fire Hazards:

It will ignite on contact with chlorine trifluoride and fluorine. Graphite dust may ignite on contact with air. May re-ignites after fire is extinguished.

### Special Remarks on Explosion Hazards:

Material in powder form, capable of creating an explosion on contact with water.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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

Avoid dust formation. Avoid breathing vapors, mist or gas. Evacuate personnel to safe areas.

Avoid breathing dust.

For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

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

#### Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

#### Large Spill:

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

### 6.4 Reference to other sections

For disposal see section 13.

## SECTION 7: HANDLING AND STORAGE

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### 7.1 Precautions for safe handling

**Suitable extinguishing media**

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents.

For precautions see section 2.2.

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

Keep container tightly closed in a dry and well-ventilated place.

**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**

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**8.1 Exposure controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Appropriate engineering controls**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**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 workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**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**

Do not let product enter drains.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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

1) Appearance	Form: powder Color: black, black brown
2) Odor	odorless
3) Odor Threshold	No data available
4) Melting Point/Freezing Point	>280 C
5) Initial Boiling Point and Boiling Range	No data available
6) Flash Point	CLOSEDCUP: Higher than 94°C (200°F)
7) Evaporation Rate	No data available
8) Flammability (solid, gas)	May be combustible at very high temperature
9) Upper/Lower Flammability or Explosive Limits	No data available
10) Vapor Pressure	No data available
11) Vapor Density	No data available
12) Relative Density	0.011- 0.013 g/cm <sup>3</sup> at 25 °C (77 °F)
13) Water Solubility	Insoluble in cold water
14) Partition Coefficient: N- Octanol/Water	No data available
15) Auto-Ignition Temperature (°C)	No data available
16) Decomposition Temperature	No data available
17) Viscosity	No data available
18) Explosive Properties	Slightly explosive in presence of moisture.
19) 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**

Reacts vigorously with liquid potassium, and potassium peroxide. If graphite contacts liquid

potassium, rubidium or cesium at 300 °C, intercalation compounds may be formed.

#### 10.4 Conditions to avoid

Heat, spark, flame or other fire origin, heat up to 290 °C (554 °F).

#### 10.5 Incompatible materials

Strong oxidizing agents, fluorine-containing reagents, peroxide.

#### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions - No data available.

Other decomposition products - No data available.

In the event of fire: see section 5.

### SECTION 11: DISPOSAL CONSIDERATIONS

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#### 11.1 Information on toxicological effects

##### Product

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

##### Contaminated packaging

Dispose of as unused product.

### SECTION 12: 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 13: REGULATORY INFORMATION**

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**13.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Authorizations and/or restrictions on use****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.

**SARA 311/312 Hazards**

No SARA Hazards

**Massachusetts Right to Know Components**

Graphite CAS-No. 7782-42-5 Revision Date 1989-08-11

**Pennsylvania Right to Know Components**

Graphite CAS-No. 7782-42-5 Revision Date 1989-08-11

**New Jersey Right to Know Components**

Graphite CAS-No. 7782-42-5 Revision Date 1989-08-11

**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.

**SECTION 14: OTHER INFORMATION**

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**HMIS Classification**

Health hazard : 0

Chronic Health Hazard : 0

Flammability : 0

Physical Hazard : 0

**NFPA Rating**

Health hazard : 0

Fire Hazard : 0

Reactivity Hazard : 0

**Disclaimer:** ACS Material, LLC believes that the information in this Safety Data Sheet is accurate and represents the best and most current information available to us. ACS Material makes no representations or warranties either express or implied, regarding the suitability of the material for any purpose or the accuracy of the information contained within this document. Accordingly, ACS Material will not be responsible for damages resulting from use of or reliance upon this information.