Material Safety Data Sheet

Double-Walled Carbon Nanotubes

Revision Date: 02/04/2009
Date Issued: 01/03/2007

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY / UNDERTAKING

Product name	Double-Walled Carbon Nanotubes
Product code	CP-0013-SG
Supplier	IoLiTec Ionic Liquids Technologies GmbH Ferdinand-Porsche-Straße 5/1 D-79211 Denzlingen Germany
Telephone	+49 (0)7666 - 9129572
Fax	+49 (0)7666 - 9129345
Emergency telephone	+49 (0)179-5322578
Email	msds@iolitec.de

2 HAZARDS IDENTIFICATION

Potential health effects

Immediate concerns	WARNING! Can cause eye and skin irritation. Avoid contact with skin, eyes and clothing. Wear protective goggles and gloves when handling this material. Wash thoroughly after handling.
Eyes	Causes irritation.
Skin	Causes irritation.
Inhalation	Causes irritation.

Material Safety Data Sheet

Double-Walled Carbon Nanotubes

Revision Date: 02/04/2009
Date Issued: 01/03/2007

3 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient name	Double-Walled Carbon Nanotubes
CAS No.	7782-42-5
Empirical Formula	C
Molecular weight	12.01 amu

4 FIRST AID MEASURES

General	Contaminated clothing should be removed and washed before being reused.
Inhalation	Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen.
Ingestion	Immediately rinse mouth and provide fresh air. Do not induce vomiting. Get medical attention immediately.
Skin	Wash the skin immediately with soap and water.
Eyes	Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

Material Safety Data Sheet

Double-Walled Carbon Nanotubes

Revision Date: 02/04/2009
Date Issued: 01/03/2007

5 FIRE FIGHTING MEASURES

Extinguishing media	Water, Carbon Dioxide, Dry chemical or Foam.
Special fire fighting procedures	No special procedures required.
Unusual fire & explosion hazards	Thermal decomposition or combustion may produce dense smoke.
Protective measures in fire	Wear self-contained breathing apparatus as combustion may produce hazardous fumes.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions during spill	Wear protective clothing and avoid inhalation of powder, fume and vapor as well as skin or eye contact.
Precautions to protect environment	Avoid washing into water courses. Avoid contaminating public drains or water supply.
Spill cleanup methods	Avoid contact with skin or inhalation of spillage, dust or vapor, Avoid dust formation. Collect and reclaim or dispose in sealed containers in license waste. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate.

Material Safety Data Sheet

Double-Walled Carbon Nanotubes

Revision Date: 02/04/2009
Date Issued: 01/03/2007

7 HANDLING AND STORAGE

Handling precautions	Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.
Storage precautions	Keep closed.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Protective equipment	Safety goggles. Chemical resident gloves. Protective clothing. Protective mask.
Process control measures	Provide eyewash station and safety shower. Use engineering controls to reduce air contamination to permissible exposure levels.
Ventilation	Provide adequate general and local exhaust ventilation.
Respirators	Use high efficiency particulate respirator with appropriate filter.

Exposure Limits

American Threshold Limit Value (TLV): 3.5 mg/m^3 (ACGIH)
German maximale Arbeitsplatzkonzentration (MAK): 6 mg/m^3
Britisch Occupational Exposure Limit (OEL): 3.5 mg/m^3
Italian Exposure Limit: 3.5 mg/m^3 TWA ; 7.0 mg/m^3 STEL

Material Safety Data Sheet

Double-Walled Carbon Nanotubes

Revision Date: 02/04/2009
Date Issued: 01/03/2007

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Solid
Odor/taste	No characteristic odor.
PH	N/A
Boiling Point	N/A
Melting Point	3,652~3,697℃
Flash Point	N/A
Flammability	N/A
Autoignition Temp	N/A
Oxidizing Properties	N/A
Explosive Properties	N/A
Explosion Limits	N/A
Vapor Pressure	N/A
SG/Density	N/A
Partition Coefficient	N/A
Viscosity	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
Evaporation Rate	N/A
Bulk Density	N/A
Decomposition Temp.	N/A
Solvent Content	N/A
Water Content	N/A
Surface Tension	N/A
Conductivity	N/A
Solubility in water	insoluble

Material Safety Data Sheet

Double-Walled Carbon Nanotubes

Revision Date: 02/04/2009
Date Issued: 01/03/2007

10 STABILITY AND REACTIVITY

Stability	No particular stability concerns.
Hazardous Decomposition Products	Consistency of decomposition products unknown.

11 TOXICOLOGICAL INFORMATION

Ingestion	Harmful if swallowed.
Inhalation	May be harmful if inhaled. Material is irritating tomucous membranes and upper respiratory tract.
Skin	May cause irritation and allergic reaction.
Eyes	May cause irritation and allergic reaction.

12 ECOLOGICAL INFORMATIONS

No known ecological harms.

13 DISPOSAL CONSIDERATIONS

Disposal method	Contact specialist disposal companies. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Dispose of in accordance with Local Authority requirements. Recover and reclaim or recycle, if practical.

14 TRANSPORT INFORMATION

General	Not classified as dangerous for transport purposes.
UN No.	0
Road transport notes	Not classified as dangerous for road transport.
Rail transport notes	Not classified as dangerous for rail transport.
Sea transport notes	Not classified as dangerous for sea transport.
Air transport notes	Not classified as dangerous for air transport.

15 REGULATORY INFORMATION

Label for supply	Xn, Harmful
Risk phrases	
R: 37	Irritating to respiratory system
R68/20	Possible irreversible damages through inhaling

Safety phrases

S7	Store in tightly closed containers
S16	Keep far from ignition source
S18	Handle container carefully
S22	Do not breathe dust
S38	Use appropriate breathing protection
S47	Do not store at temperature over 250°C

Material Safety Data Sheet

Double-Walled Carbon Nanotubes

Revision Date: 02/04/2009
Date Issued: 01/03/2007

16 OTHER INFORMATION

DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPOSED TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. IOLITEC SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT. THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR ANY PROCESS. IT IS THE USERE'S RESPONISIBILTY TO SATISFY HIMSELF AS TO THE SUITABILITY OF SUCH INFORMATION FOR HIS OWN PARTICULAR USE.

IN NO WAY SHALL IOLITEC BE LIABLE FOR ANY CLAIMS, LOSSES OR DAMAGES OF ANY THIRD PARTY OR FOR THE LOST PROFITS OR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES, HOWSOEVER ARISING, EVEN IF THE COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.