

Safety Data Sheet

Version 3.0
Feb. 12th, 2025

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

- (a) Product name: *QuantumTube*
(b) Product code: HB-S18
(c) Product form: Mixture
(d) Product identifier

Ingredients	Concentration (wt.%)	Product identifier
2,3-epoxypropyl neodecanoate	9	CAS-RN: 26761-45-5 EC-no. 247-979-2
Single wall carbon nanotubes	1	CAS-RN: Trade secret EC-no. 943-098-9 REACH-no. 01-2120130006-75-0000
Ethylene Glycol Diglycidyl Ether	90	CAS-RN: 2224-15-9

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

- (a) Use of the substance/mixture: Industrial use as an additive in coatings
(b) Uses advised against: No additional information available

1.3. Details of the supplier of the data sheet

Heebut Materials LLC
19125 North Creek Parkway
Bothell, WA 98011
USA

1.4. Emergency phone: +1 206 898 9477

Section 2: Hazards identification

2.1. Classification of the substance or mixture

(a) Classification according to regulation (EC) No. 1272/2008

Serious eye damage/eye irritation, Category 2	H319
Skin sensitization, Category 1	H317
Germ cell mutagenicity, Category 2	H341

Carcinogenicity, Category 2

H411

Reference section 16 for full text of classification

- (b) Important adverse physical, human health and environment effects
Suspected on genetic defects, skin allergy, eye irritation. Toxic to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard pictograms (GHS CN):



Signal word (GHS CN):

Warning.

Hazardous component:

2,3-epoxypropyl neodecanoate

Hazard statements (GHS CN):

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H341 - Suspected of causing genetic defects

H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (GHS CN)

Prevention measures:

P201 - Obtain special instructions before use.

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.

P264 - Wash hands, forearms, and face thoroughly after handling.

P273 - Avoid release to the environment.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

2.3. Other Hazards:

No additional information available

Section3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2 Mixtures

Ingredients	Concentration (wt.%)	Classifications (also, in Section 2.2 and section 16)
2,3-epoxypropyl neodecanoate	9	Skin: H317 Genetics: H341 Aquatic Chronic H411
Single wall carbon nanotubes	1	Eye irrit: H319
Ethylene Glycol Diglycidyl Ether	90	

Section 4. First-aid measures

4.1. Description of first-aid measures

Eye contact:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Skin contact:	Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Wash with plenty of soap and water. Wash skin with plenty of water. If skin irritation or rash occurs: Get medical advice/attention.
Inhalation:	Remove person to fresh air and keep comfortable for breathing. Get medical attention.
Ingestion:	Rinse mouth out with water. Do not induce vomiting. Get medical attention. Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed:

Skin contact:	May cause an allergic skin reaction
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4.3. Indication of any immediate medical attention and special treatment needed

Call a physician if inhaled or ingested.

Section 5. Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media:	Dry chemical powder, carbon dioxide (CO ₂), Water spray, Dry powder, Foam
Unsuitable extinguishing media:	None known

5.2. Special Hazards arising from the substance or mixture

Hazardous decomposition products:	Carbon dioxide, Carbon monoxide
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5.3. Advice for Firefighters

Protection during firefighting:	Full face mask. Wear positive pressure self-contained breathing apparatus (SCBA) if fire is large.
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Section 6. Accidental release measures

6.1. Personal precautions, Protective equipment, and emergency procedures

6.1.1. For non-emergency personnel:

- (a) Wear protective equipment.
- (b) Ensure adequate ventilation.

- (c) Keep away from open flames, hot surfaces, and sources of ignition. Avoid breathing dust/fume/gas/mist/vapors/spray.

6.1.2. For emergency responders

- (a) Wear protective equipment. Wear positive pressure self-contained breathing apparatus (SCBA) if fire is large.
- (b) Ensure adequate ventilation.

6.2. Environmental precautions:

Avoid release to the environment. Do not allow to enter surface water or drains. Collect contaminated extinguishing water separately and must not enter the sewage system.

6.3. Methods and materials for containment and clean up

Methods for cleaning:	No additional information available
For containment:	clean spills promptly. Ventilate affected area. Stop leak if safe to do so. Collect spillage.
Other information:	Dispose of materials or solid residues at an authorized site

6.4. Reference to other sections

No addition information available

Section 7: Handling and storage

7.1. Precautions for safe Handling:

Avoid contact with skin, eyes, and clothing. Handle under adequate ventilation with respiratory protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash contaminated cloth before reuse.

7.2. Contains for safe storage, including any incompatibilities

Store in dry, well-ventilated area. Store at ambient temperature. Keep container tightly closed. Protect from sunlight. Store locked up. Store in a well-ventilated place. Keep cool. Keep away from open flames, hot surfaces, and sources of ignition. Store away from water (including sewage plant).

7.3. Specific and uses

No additional information available

Section 8: Exposure controls / Personal protection

8.1. Control parameters

(a) 2,3-epoxypropyl neodecanoate.

DNEL/DMEL (Workers)

Acute - systemic effects, inhalation

2.7 mg/m³

Long-term - systemic effects, dermal	1.9 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	2.7 mg/m ³
<u>DNEL/DMEL (General population)</u>	
Long-term - systemic effects, oral	1.1 mg/kg bw/day
Long-term - systemic effects, inhalation	1.6 mg/m ³
Long-term - systemic effects, dermal	1.15 mg/kg bodyweight/day
<u>PNEC (Water)</u>	
PNEC aqua (freshwater)	0.0012 mg/l
PNEC aqua (marine water)	0.12 µg/l
PNEC aqua (intermittent, freshwater)	12 µg/l
<u>PNEC (STP)</u>	
PNEC sewage treatment plant	50 mg/l

(b) Single wall carbon nanotubes

DNEL/DMEL (Workers)

Acute - systemic effects, dermal	No hazard identified
Acute - systemic effects, inhalation	Low hazard (no threshold identified)
Acute - local effects, dermal	No hazard identified
Acute - local effects, inhalation	Low hazard (no threshold identified)
Long-term - systemic effects, dermal	No hazard identified
Long-term - local effects, dermal	No hazard identified
Long-term - systemic effects, inhalation	Low hazard (no threshold identified)
Long-term - local effects, inhalation	Low hazard (no threshold identified)

DNEL/DMEL (General population)

Acute - systemic effects, dermal	No hazard identified
Acute - systemic effects, inhalation	Low hazard (no threshold identified)
Acute - systemic effects, oral	No hazard identified
Acute - local effects, dermal	No hazard identified
Acute - local effects, inhalation	No hazard identified
Long-term - systemic effects, oral	No hazard identified
Long-term - systemic effects, inhalation	Low hazard (no threshold identified)
Long-term - systemic effects, dermal	No hazard identified
Long-term - local effects, dermal	No hazard identified
Long-term - local effects, inhalation	No hazard identified

PNEC (Water)

PNEC aqua (freshwater)	No hazard identified
PNEC aqua (marine water)	No hazard identified

PNEC (Sediment)

PNEC sediment (freshwater)	No hazard identified
PNEC sediment (marine water)	No hazard identified PNEC (Soil)

PNEC soil	No hazard identified
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PNEC (Oral)

PNEC oral (secondary poisoning)

No potential to cause toxic effects if accumulated (in higher organisms) via the food chain,

PNEC (STP)

PNEC sewage treatment plant

No data available: testing technically not feasible

8.2. Exposure controls:

Gloves. Protective clothing. Gas mask.

Hand protection:

Wear suitable gloves. EN 374

Nitrile rubber (NBR) gloves, thickness > 0.18 mm (EN 374)

Eye protection:

Chemical goggles or safety glasses. (EN 166)

Skin and body protection:

Protective clothing (with elasticated cuffs and closed neck). (EN 14605)

Respiratory protection:

Wear respiratory protection. Selection of respiratory protection must be based on the result of the risk assessment.

Personal protective equipment symbols:



Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Gel
Appearance:	Pasty
Color:	Black
Odor:	Slight
pH:	No data available
Melting point:	-60 °C (2,3-epoxypropyl neodecanoate)
Freezing point:	Not applicable
Boiling point:	278 °C (2,3-epoxypropyl neodecanoate)
Flash point:	126 °C (2,3-epoxypropyl neodecanoate)
Auto-ignition temperature:	397 °C (2,3-epoxypropyl neodecanoate)
Decomposition temperature:	No data available
Flammability:	Nonflammable
Density:	No data available

Solubility:	Slightly soluble in water. Soluble in organic solvents.
Partition coefficient n-octanol/water (Log Pow):	No data available
Radioactive:	No
Explosive properties:	Product is not explosive
Oxidizing properties:	Non oxidizing

Ethylene Glycol Diglycidyl Ether

Flash Point:	157°C (315°F)
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9.2. Other information

Not available

Section 10: Stability and reactivity

10.1. Reactivity:	Stable under normal conditions
10.2. Chemical stability:	Stable under normal conditions
10.3. Possibility of hazardous reactions:	None known
10.4. Conditions to avoid:	Keep away from open flames, hot surfaces, and sources of ignition
10.5. Incompatible materials:	Strong oxidizing agents
10.6. Hazardous decomposition products:	Incomplete combustion releases dangerous carbon monoxide, carbon dioxide and other toxic gases
10.7. Other properties:	No additional information available

Section 11: Toxicological information

11.1. Information on Hazard classes as defined in Regulation (EC) No 1272/2008

(a1) Acute toxicity (oral):	Not classified.
(a2) Acute toxicity (dermal):	Not classified.
(a3) Acute toxicity (inhalation):	Not classified.
(b) Skin corrosion/irritation:	Not available
(c) Serious eye damage/irritation:	Causes serious eye irritation.
(d) Respiratory or skin sensitization:	May cause an allergic skin reaction.
(e) Germ cell mutagenicity:	Suspected of causing genetic defects.
(f) Carcinogenicity:	Suspected of causing cancer, H351
(g) Reproductive toxicity:	Not available
(h) STOT-single Exposure:	Not available
(i) STOT-repeated exposure:	Not available
(j) Aspiration:	Not available

Section 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment,

short-term (acute): Not classified.

Hazardous to the aquatic environment,

long-term (chronic): Toxic to aquatic life with long lasting effects.

2,3-epoxypropyl neodecanoate

LC50 fish - 96h 9.6 mg/l *Oncorhynchus mykiss* (Rainbow trout)

EC50 crustacea - 48h 4.8 mg/l *Daphnia magna* (Water flea)

EC50 algae - 96h 3.5 mg/l algae

12.2. Persistence and degradability

Single wall carbon nanotubes: Not rapidly degradable

12.3. Bioaccumulative potential

No addition information available

2,3-epoxypropyl neodecanoate

Partition coefficient n-octanol/water (Log Pow): 4.4 @ 20 °C

12.4. Mobility in soil

No addition information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

12.7. Other adverse effects

No additional information available

Section 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste): Dispose of this material and its container at hazardous or special waste collection point.

Waste treatment methods: Disposal through controlled incineration or authorized waste dump.






Sewage disposal recommendations: Prevent entry to sewers and public waters.

Product/Packaging disposal recommendations: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Additional information: Clean up even minor leaks or spills, if possible, without unnecessary risk.

European List of Waste (LoW) code: 06 13 99 - wastes not otherwise specified

Section 14: Transport information

	ADR	IMDG	IATA	ADN	RID
14.1.	3077	3077	3077	3077	3077
14.2.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS: 2,3-epoxypropyl neodecanoate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS: 2,3-epoxypropyl neodecanoate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS: 2,3-epoxypropyl neodecanoate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS: 2,3-epoxypropyl neodecanoate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS: 2,3-epoxypropyl neodecanoate)
14.3.	9	9	9	9	9
					
14.4 packing group	III	III	III	III	III
14.5 Environmental hazards	Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes

14.6.

Overland transport

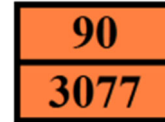
Classification code (ADR):	M7
Special provisions (ADR):	274, 335, 375, 601
Limited quantities (ADR):	5kg
Excepted quantities (ADR):	E1
Packing instructions (ADR):	P002, IBC08, LP02, R001
Special packing provisions (ADR):	PP12, B3
Mixed packing provisions (ADR):	MP10
Portable tank and bulk container instructions (ADR):	T1, BK1, BK2, BK3
Portable tank and bulk container special provisions (ADR):	TP33
Tank code (ADR):	SGAV, LGBV
Vehicle for tank carriage:	AT
Transport category (ADR):	3
Special provisions for carriage - Packages (ADR):	V13
Special provisions for carriage - Bulk (ADR):	VC1, VC2

Special provisions for carriage - Loading, unloading
and handling (ADR):

CV13

Hazard identification number (Kemler No.):

90



Orange plates:

Tunnel restriction code (ADR):

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Air transport

PCA Excepted quantities (IATA):

E1

PCA Limited quantities (IATA):

Y956

PCA limited quantity max net quantity (IATA):

30kgG

PCA packing instructions (IATA):

956

PCA max net quantity (IATA):

400kg

CAO packing instructions (IATA):

956

CAO max net quantity (IATA):

400kg

Special provisions (IATA):

A97, A158, A179, A197

ERG code (IATA):

9L

Transport by sea

Special provisions (IMDG):

274, 335, 966, 967, 969

Limited quantities (IMDG):

5 kg

Excepted quantities (IMDG):

E1

Packing instructions (IMDG):

LP02, P002

Special packing provisions (IMDG):

PP12

IBC packing instructions (IMDG):

IBC08

IBC special provisions (IMDG):

B3

Tank instructions (IMDG):

BK1, BK2, BK3, T1

Tank special provisions (IMDG):

TP33

EmS-No. (Fire):

F-A

EmS-No. (Spillage):

S-F

Stowage category (IMDG):

A

Stowage and handling (IMDG):

SW23

Inland waterway transport

Classification code (ADN):

M7

Special provisions (ADN):

274, 335, 375, 601

Limited quantities (ADN):

5 kg

Excepted quantities (ADN):

E1

Equipment required (ADN):

PP, A

Number of blue cones/lights (ADN):

0

Rail transport

Classification code (RID):

M7

Special provisions (RID):

274, 335, 375, 601

Limited quantities (RID):

5kg

Excepted quantities (RID):	E1
Packing instructions (RID):	P002, IBC08, LP02, R001
Special packing provisions (RID):	PP12, B3
Mixed packing provisions (RID):	MP10
Portable tank and bulk container instructions (RID):	T1, BK1, BK2, BK3
Portable tank and bulk container special provisions (RID):	TP33
Tank codes for RID tanks (RID):	SGAV, LGBV
Transport category (RID):	3
Special provisions for carriage – Packages (RID):	W13
Special provisions for carriage – Bulk (RID):	VC1, VC2
Special provisions for carriage - Loading, unloading and handling (RID):	CW13, CW31
Colis express (express parcels) (RID):	CE11
Hazard identification number (RID):	90

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

Section 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

2,3-epoxypropyl neodecanoate (reference code 3(b))

Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10

2,3-epoxypropyl neodecanoate (reference code 3(c))

Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

Germany

Employment restrictions:	Observe restrictions according Act on the Protection of Working Mothers (MuSchG). Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG)
Water hazard class (WGK):	WGK 2, Significantly hazardous to water (Classification according to AwSV, Annex 1)
Hazardous Incident Ordinance (12. BImSchV):	Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen:	None of the components are listed
SZW-lijst van mutagene stoffen:	None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding:	None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid:	None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling:	None of the components are listed

Denmark

Danish National Regulations:	Young people below the age of 18 years are not allowed to use the product. Pregnant/breastfeeding women working with the product must not be in direct contact with the product.
Contains Hazardous Chemical(s):	2,3-epoxypropyl neodecanoate Single wall carbon nanotubes are not listed

15.2. Chemical safety assessment

Single wall carbon nanotubes and 2,3-epoxypropyl neodecanoate have been carried out chemical safety assessments.

Disclaimer:

The above information is based on our best knowledge to describe the product for the purposes of health, safety, and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. It is the user's responsibility to take mentioned precaution measures and ensure that this information is complete and sufficient for the use of this product. Furthermore, if the product is used as a component in another product, this SDS information may not be applicable. We do not accept and hereby disclaims liability for, any damages whatsoever in connection with the handling, storage, use or disposal of the product.