

1. Identification of the substance/mixture and of the company/undertaking

Identification of the substance/preparation

Product code Q21761MP
Product name Qdot® 705 ITK™ organic quantum dots

Company/Undertaking Identification

Life Technologies
5791 Van Allen Way
PO Box 6482
Carlsbad, CA 92008
+1 760 603 7200

LIFE TECHNOLOGIES LIMITED
3 FOUNTAIN DRIVE
INCHINNAN BUSINESS PARK
PAISLEY, PA4 9RF
SCOTLAND
44-141 814-6100

24 hour Emergency Response:

866-536-0631
301-431-8585
Outside of the U.S. ++1-301-431-8585

For research use only. Not intended for human or animal diagnostic or therapeutic uses.

2. Hazards identification

In accordance with local and national regulations,

The product is classified and labelled in accordance with Directive 1999/45/EC. REGULATION (EC) No 1272/2008
Classification according to EU Directives 67/548/EEC or 1999/45/EC.

GHS - Classification

Signal word

Danger



Revision Date: 26-Dec-2013
Product code Q21761MP

Product name Qdot® 705 ITK™ organic quantum dots **Page 1 / 7**

Health hazard

Aspiration toxicity	Category 1
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Physical hazards

H226 - Flammable liquid and vapour.

GHS Physical Hazard 1	Flammable liquids
GHS Physical Hazard Category Number	Category 3

Hazard statements

H226 - Flammable liquid and vapour

H304 - May be fatal if swallowed and enters airways

H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

P240 - Ground/bond container and receiving equipment

P241 - Use explosion-proof electrical/ventilating/lighting/.?/ equipment

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

P273 - Avoid release to the environment

European Union



EU Specific Hazard Statements

R-phrase(s)

R10 - Flammable

R65 - Harmful: may cause lung damage if swallowed

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets

S24/25 - Avoid contact with skin and eyes

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

Principle Routes of Exposure/ Potential Health effects

Eyes

May cause eye irritation with susceptible persons.

Skin

May cause skin irritation in susceptible persons.

Inhalation

May cause irritation of respiratory tract.

Ingestion

May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Specific effects

Revision Date: 26-Dec-2013
Product code Q21761MP

Page 2 / 7
Product name Qdot® 705 ITK™ organic quantum dots

Carcinogenic effects	none
Mutagenic effects	none
Reproductive toxicity	none
Sensitisation	none
Target Organ Effects	None under normal use conditions

3. Composition/information on ingredients

Chemical Name	CAS-No.	EINECS-No.	Weight percent
Decane	124-18-5	204-686-4	60-100
Qdot® 605 ITK carboxyl	NONE	-	0.1-1.0
Selenium compounds	-	Not Listed	<0.05

We recommend handling all chemicals with caution.

4. FIRST AID MEASURES

Skin contact	Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Immediate medical attention is required.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Ingestion	Call a physician or Poison Control Centre immediately. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice.
Inhalation	Move to fresh air. If not breathing, give artificial respiration. Call a physician or Poison Control Centre immediately.
Notes to physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Dry powder. Foam. Carbon dioxide (CO ₂).
Special protective equipment for firefighters	Wear self-contained breathing apparatus and protective suit.

Australia HazChem Code 3Y

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Use personal protective equipment.
Methods for cleaning up	Soak up with inert absorbent material.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

See Section 12 for additional information.

7. HANDLING AND STORAGE

Revision Date: 26-Dec-2013
Product code Q21761MP

Page 3 / 7
Product name Qdot® 705 ITK™ organic quantum dots

**Handling
Storage**

Avoid contact with skin, eyes and clothing. Wear personal protective equipment.
Keep in a dry, cool and well-ventilated place. Keep in properly labelled containers.

8. Exposure controls/personal protection

Exposure limits

At this time, the limited evidence available suggests caution when potential exposures to nanoparticles may occur. Due to the limited information about health risks from nanomaterials, it is prudent to take steps for minimizing worker exposures. Research is still needed to understand the impact of nanotechnology on health, and to determine appropriate exposure monitoring and control strategies.

Chemical Name	EU OEL (TWA)	EU OEL (STEL)	EU Skin Notation
Decane 124-18-5	None	None	None
Qdot® 605 ITK carboxyl NONE	None	None	None
Selenium compounds	None	None	None

Chemical Name	Austria	Belgium (TWA)	Denmark (TWA)	Finland OEL (TWA)
Decane 124-18-5	None	None	45 ppm 250 mg/m ³	None
Qdot® 605 ITK carboxyl NONE	None	None	None	None
Selenium compounds	0.1 mg/m ³	0.2 mg/m ³	0.1 mg/m ³	None

Chemical Name	France OEL (VME)	Germany OEL (TWA)	Ireland (TWA)	Italy OEL (TWA)
Decane 124-18-5	1000 mg/m ³	None	None	None
Qdot® 605 ITK carboxyl NONE	None	None	None	None
Selenium compounds	None	0.05 mg/m ³ exposure factor 1	0.1 mg/m ³	None

Chemical Name	Sweden - Occupational Exposure Limits - TLVs (LLVs)	Netherlands OEL (MAC)	Spain OEL (TWA)	United Kingdom
Decane 124-18-5	none	None	None	None
Qdot® 605 ITK carboxyl NONE	none	None	None	None
Selenium compounds	0.1 mg/m ³ LLV (except Hydrogen selenide, total dust, as Se)	None	0.1 mg/m ³	None

Chemical Name	European Union	United Kingdom	France OEL (VME)	Germany OEL (TWA)
Decane 124-18-5	None	None	1000 mg/m ³	None
Qdot® 605 ITK carboxyl NONE	None	None	None	None
Selenium compounds	None	None	None	0.05 mg/m ³ exposure factor 1

Chemical Name	Italy OEL (TWA)	Portugal	Netherlands OEL (MAC)	Finland OEL (TWA)
Decane 124-18-5	None	None	None	None
Qdot® 605 ITK carboxyl NONE	None	None	None	None
Selenium compounds	None	None	None	None

Chemical Name	Austria	Denmark	Poland	Switzerland
Decane 124-18-5	None	None	None	None
Qdot® 605 ITK carboxyl NONE	None	None	None	None
Selenium compounds	0.1 mg/m ³	None	None	None

Chemical Name	Ireland	Norway	Spain OEL (TWA)
Decane 124-18-5	None	None	None
Qdot® 605 ITK carboxyl NONE	None	None	None
Selenium compounds	None	None	0.1 mg/m ³

Engineering measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Personal Protective Equipment requirements are dependent on the user institution's risk assessment and are specific to the risk assessment for each laboratory where this material may be used.

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment.

Hand protection Impervious gloves.

Eye protection Safety glasses with side-shields.

Skin and body protection Lightweight protective clothing.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Prevent product from entering drains. Do not allow material to contaminate ground water system.

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information

Form	suspension	
Appearance	colourless	
Odour	No information available	
Boiling Point/Range	°C 274	°F No data available
Melting point/range	°C No data available	°F No data available
Flash point	°C No data available	°F No data available
Autoignition temperature	°C 208	°F No data available
oxidising properties	No information available	
Water solubility	slightly soluble	

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Materials to avoid	heat
Hazardous decomposition products	No information available
polymerisation	None under normal processing.

Hazardous reactions

Hazardous polymerisation does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

At this time, the limited evidence available suggests caution when potential exposures to nanoparticles may occur. Due to the limited information about health risks from nanomaterials, it is prudent to take steps for minimizing worker exposures. Occupational health risks associated with manufacturing and using nanomaterials are not yet clearly understood. Studies have indicated that low solubility nanoparticles are more toxic than larger particles on a mass for mass basis. There are strong indications that particle surface area and surface chemistry are responsible for observed responses in cell cultures and animals. There are indications that nanoparticles can penetrate through the skin or move from the respiratory system to other organs.

Chemical Name	LD50 (oral, rat/mouse)	LD50 (dermal, rat/rabbit)	LC50 (inhalation, rat/mouse)
Decane	> 5000 mg/kg (Rat) > 3990 mg/kg (Rat)	No data available	=72300mg/m ³ (Mouse) >5.6mg/L(Rat)
Qdot® 605 ITK carboxyl	No data available	No data available	No data available
Selenium compounds	= 7 mg/kg (Rat)	No data available	No data available

Principle Routes of Exposure/**Potential Health effects****Eyes**

May cause eye irritation with susceptible persons.

Skin

May cause skin irritation in susceptible persons.

Inhalation

May cause irritation of respiratory tract.

Ingestion

May be harmful if swallowed Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Carcinogenic effects

none

Mutagenic effects

none

Reproductive toxicity

none

Sensitisation

none

Target Organ Effects

None under normal use conditions

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Chlorella vulgaris (Fresh water algae) Daphnia magna (Water flea)

Acute aquatic toxicity

Category 1

Mobility

see log Pow

Biodegradation

Inherently biodegradable.

Bioaccumulation

Does not bioaccumulate.

Chemical Name	Freshwater Algae Data	Water Flea Data	Freshwater Fish Species Data	Microtox Data	log Pow
Decane 124-18-5	Chlorella vulgaris EC50=0.043 mg/L (24 h)	Daphnia magna EC50=0.02856 mg/L (48 h) Daphnia magna EC50=0.029 mg/L (48 h)			logPow5.1

13. DISPOSAL CONSIDERATIONS

Revision Date: 26-Dec-2013
Product code: Q21761MP

Page 6 / 7
Product name Qdot® 705 ITK™ organic quantum dots

Dispose of in accordance with local regulations
S61 - Avoid release to the environment. Refer to special instructions/safety data sheets

14. TRANSPORT INFORMATION

IATA

Proper shipping name n-Decane
Hazard class 3
Subsidiary Class None
Packing group III
UN-No UN2247

15. Regulatory information

International Inventories

Chemical Name	EINECS	ELINCS	ENCS	PICCS
Decane	Listed	-	Listed	Listed
Qdot® 605 ITK carboxyl	-	-	-	-
Selenium compounds	Listed	-	Listed	Listed

Chemical Name	AICS	KECL	DSL	NDSL
Decane	Listed	Listed	Listed	-
Qdot® 605 ITK carboxyl	-	-	-	-
Selenium compounds	Listed	Listed	Listed	-

16. OTHER INFORMATION

Reason for Revision (M)SDS sections updated

For research use only. Not intended for human or animal diagnostic or therapeutic uses.

References

- National Institute for Occupational Safety and Health (NIOSH), U.S., 2010:
<http://www.cdc.gov/niosh/topics/nanotech/>
- National Institute for Occupational Safety and Health (NIOSH), U.S., 2009:
<http://www.cdc.gov/niosh/docs/2009-125/pdfs/2009-125.pdf>

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End of Safety Data Sheet

Revision Date: 26-Dec-2013
Product code Q21761MP

Page 7 / 7
Product name Qdot® 705 ITK™ organic quantum dots