MATERIAL SAFETY DATA SHEET
TCNQ

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

1.1. Product Details

Product Code	:	M681
Name	:	7,7,8,8-Tetracyanoquinodimethane
REACH No.	:	A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.
CAS No.	:	1518-16-7

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

Identified uses	:	Laboratory chemicals

1.3. Supplier details

Supplied by	:	Ossila Limited Kroto Innovation Centre Broad Lane, Sheffield S3 7HQ, UK
Telephone	:	0114 213 2770
Email address	:	info@ossila.com

2. Hazards identification

2.1. Classification of the substance or mixture

Hazard statements according to Regulation (EC) 1272/2008
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311

2.2. Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Signal word	Danger
Hazard statement(s)	
HH301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled
Precautionary statement(s)	
P261	Avoid breathing dust.
P280	Wear protective gloves/ protective clothing.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P311	Call a POISON CENTER or doctor/ physician.
Supplemental information	None.

2.3. Other hazards

None.

3. Composition/Information on ingredients

3.1. Substances

Synonyms	:	TCNQ (2,5-Cyclohexadiene-1,4-diylidene)-dimalononitrile
Formula	:	$C_{12}H_4N_4$
Molecular weight	:	204.19 g/mol

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	CAS #	Weight %	CLP Classification
2,2'-(2,5-Cyclohexadiene-1,4-diylidene)bismalononitrile	1518-16-7	≤ 100 %	Acute Tox. 3 (H301 + H311 + H331)

4. First aid measures

4.1. Description of first aid measures

After Inhalation
If inhaled, remove to fresh air. If not breathing give artificial respiration. Call a physician.

After skin contact
In case of skin contact, wash with soap and flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

After eye contact
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

After Ingestion
If swallowed, wash out mouth with water. Call a physician.

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

The most important known symptoms and effects are described in section 11.

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

No data available.

5. Fire fighting

5.1. Extinguishing media

Suitable extinguishing media: Dry chemical, alcohol-resistant foam, carbon dioxide or water spray. Consult with local fire authorities before attempting large scale fire fighting operations.

5.2. Special hazards arising from the substance of mixture

Hazardous combustion products: Carbon oxides, nitrogen oxides.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus if necessary. During a fire, irritating and highly toxic gases and vapours may be generated by thermal decomposition.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protective equipment (section 8). Avoid dust formation. Avoid breathing dust. Ensure room is well ventilated. Remove all sources of ignition.

6.2. Environmental precautions

Do not let product enter drains.

6.3. Containment and cleaning

Contain and clean up spill if safe to do so using an electrically protected vacuum cleaner or by wet-brushing. Dispose of dry waste in closed container for proper disposal according to local regulations.

7. Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide exhaust ventilation in places where dust is formed.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry and well-ventilated place inside of a tightly sealed container. Reseal containers that have been opened and keep upright to prevent leakage. Store locked up.

7.3. Specific end uses

Use in laboratories.

8. Exposure controls / Personal protection

8.1. Control parameters

Exposure limit sources

UK – EH40 Workplace Exposure Limits (WEL).

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Biological occupational exposure limits

This product does not contain any hazardous materials with biological limits.

8.2. Exposure controls

Engineering measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial engineering/laboratory practices for hygiene and safety. Ensure eyewash stations and safety showers are close to the laboratory workstation. Ensure good general ventilation is present when handling the product.

Personal protective equipment

Eyes: Wear safety glasses with side-shields conforming to appropriate government standards such as NOISH (US) or EN166 (EU).
Skin: Handle with appropriate gloves and use proper glove removal technique to avoid skin contact. Dispose of gloves in accordance with applicable laws. Wash and dry hands.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Clothing: Wear complete suit protecting against chemicals; the type of equipment should be appropriate for the concentration and amount of dangerous substance used.
Respirators: Use a full-face particle respirator with type N99 (US) or type P2 (EN 143) respirator cartridges, or those approved under appropriate government standards such as NIOSH (US) or CEN (EU), as a backup to engineering controls.

General hygiene measures

Wash thoroughly after handling. Wash contaminated clothing before reuse.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	:	Solid dark brown crystal/powder
Odour	:	No data available
Odour threshold	:	No data available
pH	:	No data available
Melting/freezing point	:	No data available
Boiling point/range	:	289 °C (dec.)
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability	:	No data available
Explosive limits	:	No data available
Vapour pressure	:	No data available
Vapour density	:	No data available
Relative density	:	No data available
Solubility(ies)	:	Dioxane, tetrahydrofuran (THF)
Partition coefficient: *n*-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available

9.2. Other safety information

No data available.

10. Stability and reactivity

10.1 Reactivity

No data available.

10.2. Chemical stability

Stable under normal temperatures and pressures 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 oxidising agents.

10.6. Hazardous decomposition products

No known hazardous decomposition products.

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity
No data available.
Skin corrosion/irritation
Based on available data the classification criteria are not met
Serious eye damage/eye irritation
No data available.
Respiratory or skin sensitization
Based on available data the classification criteria are not met
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.
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.
Signs and Symptoms of Exposure
No data available.
Additional Information
May cause cyanosis. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. Ecological information

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.

13. Disposal

13.1. Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state and local environmental regulations and directives on waste and hazardous waste. Offer surplus material to a licensed professional waste disposal professional.

Contaminated packaging
Dispose of as unused product.

14. Transport

14.1. UN number

ADR/RID: 3439 IMDG: 3439 IATA: 3439

14.2. UN proper shipping name

ADR/RID: Nitriles, toxic, solid, n.o.s. (2,2'-(2,5-Cyclohexadiene-1,4-diylidene)bismalononitrile)
IMDG: Nitriles, toxic, solid, n.o.s. (2,2'-(2,5-Cyclohexadiene-1,4-diylidene)bismalononitrile)
IATA: Nitriles, toxic, solid, n.o.s. (2,2'-(2,5-Cyclohexadiene-1,4-diylidene)bismalononitrile)

14.3. Transport hazard class

ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

14.4. Packaging group

ADR/RID: III IMDG: III IATA: III

14.5. Environmental hazards

No hazards identified.

14.6. Special precautions for user

No special precautions required.

15. Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006, the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

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

No data available.

15.2 Chemical safety assessment

No chemical safety report/assessment was carried out for this product.

16. Other information

Warranty

This material is for research and development use only. The information provided here is based upon the available information from material suppliers but not warranted as complete and is provided only as a guide. Ossila Limited shall not be held responsible for any damage resulting from use or handling of this product.