

Safety data sheet

MXene

Version 1.0

Effective date: 23-10-2020



SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Trade name: MXene
(Ti₃C₂T_x).
)

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

Product use: 2D material.

Professional use.

1.3 Details of the supplier of the safety data sheet:

Company: Nanoplexus Ltd.
C/O UHY Hacker Young
St. James Building, 79 Oxford Street
Manchester, Lancashire
United Kingdom, M1 6HT
Telephone: +44 (0) 739 789 3268
www.nanoplexus.co.uk

Contact: info@nanoplexus.co.uk

1.4 Emergency telephone number:

Company emergency telephone number: +45 5368 1901.
United Kingdom: Contact The National Poisons Information Service (dial 111, 24 h service).

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture according to CLP no. 1272/2008.

Not classified.

2.2 Label elements according to CLP no. 1272/2008:

Not classified.

Additional information:

-

2.3 Other hazards.

PBT and vPvB: Unknown.

Safety data sheet

MXene

Version 1.0

Effective date: 23-10-2020



SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance:

CAS/EC-no.	REACH-no.	Name	Content %	Classification CLP
- / -	-	MXene (Ti3C2TX)	~100	Not classified

Occupational limits are listed in section 8, if these are available.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures:

General information:

In the case of accident: Contact a doctor or casualty department – bring this safety data sheet with you.

Inhalation:

If inhaled, remove to fresh air. Get medical attention if irritation persists.

Skin contact:

Wash skin thoroughly with soap and water. If skin irritation occurs: Get medical advice/attention.

Eye contact:

Immediately rinse with water. Continue to rinse for several minutes. Hold eyelids apart. If irritation occurs: Get medical advice/attention.

Ingestion:

Rinse mouth with water and spit it out. If continued discomfort, seek medical attention.

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

None known.

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

Treat symptomatically.

SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media for the surrounding fire should be used. Option: CO₂, foam, dry powder, water spray.

Unsuitable extinguishing media:

None known.

5.2 Special hazards arising from the substance or mixture:

In case of fire, harmful decomposition products may be formed, do not inhale.

5.3 Advice for firefighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact.

Safety data sheet

MXene

Version 1.0

Effective date: 23-10-2020



SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment, see section 8. Avoid contact with skin and eyes. Avoid dust formation and breathing dust. Ensure sufficient ventilation.

6.2 Environmental precautions:

Avoid discharge to lakes, streams, sewers, etc.

6.3 Methods and material for containment and cleaning up:

Sweep up and place in an appropriate closed container for disposal. Vacuuming or wet sweeping can prevent dust formation. Dispose of in accordance with section 13. Clean area thoroughly plenty of water.

6.4 Reference to other sections:

See section 8 for information on personal protection equipment.
See section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling:

See section 8 for personal protection. Avoid contact with skin and eyes. Avoid dust formation and breathing dust. Ensure sufficient ventilation. Smoking, storage of tobacco, consumption and storage of food or liquids are not allowed in the workrooms.

7.2 Conditions for safe storage, including any incompatibilities:

Store in original container.
Keep tightly closed in a dry and well-ventilated place.
Store away from: moist, strong acids, strong oxidizing agents and strong bases.

7.3 Specific end use(s):

This product should only be used for applications described in section 1.2.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters - Occupational exposure limits EH-40 (Great Britain) 2018:

CAS-no:	Name:	Limits:	Comments:
-	Dust - total inhalable - respirable	Long-term value (TWA): 10 mg/m ³ Long-term value (TWA): 4 mg/m ³	-

DNEL / PNEC:

-

Safety data sheet

MXene

Version 1.0

Effective date: 23-10-2020



8.2 Exposure controls

Appropriate technical measures:

Airborne concentrations must be kept as low as possible and below the current exposure limits. Use for example an exhaust system if the normal air flow in the work room is not sufficient.

General information / Hygiene measures:

Smoking, consumption of food or liquid, and storage of tobacco, food or liquid, are not allowed in the workroom. Whenever you take a break in using this product and when you have finished using it, all exposed areas of the body must be washed. Always wash hands, forearms and face. Avoid contact with eyes and skin. Avoid breathing dust/powder.

Personal protective equipment:

Only CE-marked personal protection equipment should be used.

Respiratory protection:

Normally not necessary.
In case of inadequate ventilation, use respiratory protection with filter P2.

Hand protection:

Wear protective gloves. EN 374.
Option: Nitril/PVC gloves. ≥ 480 min.

Eye protection:

Wear safety glasses if risk of contact. EN 166

Body protection:

Protective clothing as needed.

Measures to avoid environmental exposure:

Avoid discharge to lakes, streams, sewers, etc.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance: Powder	Color: Black/dark grey	Odor: Product specific	PH: No data	Viscosity 20°C: Not relevant
Flashpoint: No data	Boiling point: 4830°C	Vapor pressure: 1 Pa	Density g/cm³: 4.81	Melting point: -3180C°
Oxidizing properties: No hazard	Auto-ignition: No data	Explosive properties: No data	Solubility in water: No data	

9.2 Other information:

-

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity: No dangerous reaction known under conditions of normal use and storage.

10.2 Chemical stability: Stable under normal storage conditions.

10.3 Possibility of hazardous reactions: No dangerous reactions known.

Safety data sheet

MXene

Version 1.0

Effective date: 23-10-2020



10.4 Conditions to avoid: Contact with moist, strong acids, strong oxidizing agents and strong bases.

10.5 Incompatible materials: Moist, strong acids, strong oxidizing agents and strong bases.

10.6 Hazardous decomposition products:
The product is not degraded when used as specified in section 1.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Acute toxicity: Not classified.

Skin corrosion/irritation: Not classified.

Serious eye damage/irritation: Not classified.

Respiratory or skin sensitization: Not classified.

Germ cell mutagenicity: Not classified.

Carcinogenicity: Not classified.

Reproductive toxicity: Not classified.

Specific target organ toxicity - single exposure: Not classified.

Specific target organ toxicity – repeated exposure: Not classified.

Aspiration hazard: Not classified.

11.2 Information on other hazards:

Endocrine disrupting properties:
The product/substance has no endocrine disrupting properties.

Other information: No other relevant information.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity: Not classified.

12.2 Persistence and degradability:
No further relevant information available.

12.3 Bioaccumulative potential:
No further relevant information available.

12.4 Mobility in soil: No further relevant information available.

Safety data sheet

MXene

Version 1.0

Effective date: 23-10-2020



12.5 Result of PBT and vPvB assessment:

No further relevant information available.

12.6 Endocrine disrupting properties:

The product/substance has no endocrine disrupting properties.

12.7 Other adverse effects:

None known.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Avoid discharge to drain or surface water. Collect spills and waste in closed, leak-proof containers for disposal at the local hazardous waste site. Dispose in a safe manner in accordance with local/national regulations. The coding of a waste stream is based on the application of the product by the consumer.

Contaminated packing:

Packaging which contains leftovers from the product must be disposed of in the same way as the product.

SECTION 14. TRANSPORT INFORMATION

This product is not classified as dangerous to transport.

	ADR/RID	IMDG/IMO
14.1 UN number	Not relevant	Not relevant
14.2 UN proper shipping name	Not relevant	Not relevant
14.3 Transport hazard class(es)	Not relevant	Not relevant
14.4 Packing group	Not relevant	Not relevant
14.5 Environmental hazards – MP EMS:	No Not relevant	No Not relevant
Other informations	LQ: Not relevant Tunnel: Not relevant	LQ: Not relevant Tunnel: Not relevant

14.6 Special precautions for user:

Not relevant.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Not relevant.

Safety data sheet

MXene

Version 1.0

Effective date: 23-10-2020



SECTION 15. REGULATORY INFORMATION

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

Sources: Pressure Equipment (Amendment) Regulations 2011. Chemicals (Hazard Information and Packaging for Supply) Regulations 2009. Control of Substances Hazardous to Health Regulations 2002 (as amended). Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997. Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013. Regulation (EU) 2016/425 of 9 March 2016 on personal protective equipment. Hazardous Waste (England and Wales) Regulations 2005 (as amended). EC regulation 1907/2006 (REACH) Directive 2000/532/EC. Seveso directive: 96/82/EC. EC regulation no. 2020/878. CLP regulation no. 1272/2008. REACH regulation 1907/2006.

Additional information: For professional use only.

15.2 Chemical safety assessment:

A chemical safety assessment has not been carried out.

SECTION 16. OTHER INFORMATION

Full text of H-phrases as mentioned in section 3:

-

Additional information:

This information is based on our current knowledge and is intended 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.

Validated by:

SRS

www.msds-eu.com