

SAFETY DATA SHEET

TMC-3283E Electronic Liquid

SECTION 1: IDENTIFICATION

1.1. Product identifier:

Trade name: TMC-3283E Electronic Liquid
Other names / Synonyms: Perfluoro-compounds, C5-18
Product no.: 9520E, 9590E-B, 9520E-11, 9520E-25, 9520E-550
Other means of identification: CAS No.: 86508-42-1

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

Relevant identified uses of the substance or mixture: Heat Transfer
 Restricted to professional users.
Uses advised against : Not Intended for Use as Medical Device or Drug.

1.3. Details of the supplier of the safety data sheet:

Company and address: **TMC Industries, Inc.**
 1423 Mill Lane
 Waconia, Minnesota 55387
 USA
 TF: +1 (800) 772-8179
 www.tmcindustries.com
Contact person: Nick Hansen
E-mail: sales@tmcindustries.com
SDS date: 10/1/2025
SDS Version: 10.0
Date of previous version: 5/21/2025 (9.0)

1.4. ▼ Emergency telephone number:

VeolocityEHS 1-800-255-3924 within the US, Canada, Puerto Rico and the U.S. Virgin Islands. If outside those areas, call 1-813-248-0585 (Contract#: MIS8157133).

SECTION 2: HAZARD(S) IDENTIFICATION

2.1. Classification of the substance or mixture:

Not classified according to HCS (29 CFR 1910.1200)

2.2. Label elements:

Hazard pictogram(s):



Signal word: Not applicable.

Hazard statement(s):

Precautionary statement(s):

General: Keep out of reach of children. (P102)
Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210)

	Do not allow contact with air. (P222)
	Wear eye protection/protective gloves/protective clothing. (P280)
	Avoid release to the environment. (P273)
Response:	Leaking gas fire: Do not extinguish, unless leak can be stopped safely. (P377)
	In case of leakage, eliminate all ignition sources. (P381)
Storage:	Store in a well-ventilated place. (P403)
Disposal:	Refer to the manufacturer/supplier for information on disposal/ recovery/ recycling. (P503)
Hazards not otherwise classified (HNOC):	May be harmful if swallowed Repeated exposure may cause skin dryness or cracking.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances:

Product/substance	Identifiers	% w/w	Classification	Note
Perfluoro compounds, C5-18	CAS No.: 86508-42-1	100%		[19]

3.2. Mixtures:

Not applicable. This product is a substance.

Where the concentration of an ingredient is expressed as a range the exact concentration has been withheld as a trade secret.

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information:

[19] UVCB = Unknown or variable composition, complex reaction products or of biological materials

SECTION 4: FIRST-AID MEASURES

4.1. ▼ Description of first aid measures:

General information:	If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid). Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.
▼ Inhalation:	Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.
Skin contact:	Upon irritation: rinse with water. In the event of continued irritation, seek medical assistance.
▼ Eye contact:	If in eyes: Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Remove contact lenses. Seek medical assistance and continue flushing during transport.
▼ Ingestion:	If the person is conscious, rinse the mouth with water and stay with the person. Never give the person anything to drink. In case of malaise, seek medical advice immediately and bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the person lean forward with head down to avoid inhalation of or choking on vomited material.
Burns:	Not applicable.

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.

Information to medics:

Bring this safety data sheet or the label from this product.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media:

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.

Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture:

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Halogenated compounds

Nitrogen oxides (NO_x)

Carbon oxides (CO / CO₂)

5.3. Advice for firefighters:

No specific requirements.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

Contaminated areas may be slippery.

6.2. Environmental precautions:

Avoid discharge to lakes, streams, sewers, etc.

Keep unauthorized persons away from the spill

6.3. Methods and material for containment and cleaning up:

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections:

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling:

Smoking, drinking and consumption of food is not allowed in the work area.

See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. ▼ Conditions for safe storage, including any incompatibilities:

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage material:

Plastic Container

Glass Container

Storage conditions: Metal Container.
Keep container tightly closed
Do not place container horizontally or upside down
Store at normal temperature under normal warehouse conditions and away from heat source

Incompatible materials: Strong oxidizing agents

7.3. Specific end use(s):

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

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

No substances are listed with a permissible exposure limit (ref: 29 CFR 1910.1000 TABLE Z-1)

8.2. ▼ Exposure controls:

Apply general control to prevent unnecessary exposure

General recommendations: Smoking, drinking and consumption of food is not allowed in the work area.

Exposure scenarios: There are no exposure scenarios implemented for this product.

Exposure limits: Occupational exposure limits have not been defined for the substances in this product.

Appropriate technical measures: Apply standard precautions during use of the product. Avoid inhalation of vapours.

▼ Hygiene measures: In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Pay special attention to hands, forearms and face.

Measures to avoid environmental exposure: No specific requirements.

Individual protection measures, such as personal protective equipment:

Generally: Use only protective equipment with a recognized certification mark, e.g. the UL mark.

Respiratory Equipment:

Work situation	Type	Class	Colour	Standards	
When the product is subjected to extreme heat, HF may be formed.	Positive pressure supplied air respirator.				

Skin protection:

Work situation	Recommended	Type/Category	Standards	
When the product is subjected to extreme heat, HF may be formed.	Use proper protective clothing	Use proper protective clothing		

Hand protection:

Work situation	Material	Glove thickness (mm)	Breakthrough time (min.)	Standards	
When the product is subjected to extreme heat, HF may be formed.	Neoprene				

Eye protection:

Work situation	Type	Standards	
if the situation requires.	Safety glasses	EN166	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties:

Physical state:	Liquid
Color:	Colourless
Odor:	None
Odor threshold (ppm):	No data available
pH:	7
Density (g/cm³):	No data available
Relative density:	1.83
Kinematic viscosity:	1.9 centistokes
Particle characteristics:	No data available

Phase changes:

Melting point/freezing point (°F):	Not applicable
Softening point/range (°F):	Does not apply to liquids.
Boiling point (°F):	262.4
Boiling point (°C):	128
Vapor pressure:	0.503 psi (77 °F)
Relative vapor density:	No data available
Decomposition temperature (°F):	No data available

Data on fire and explosion hazards:

Flash point (°F):	None
Flammability (°F):	No data available
Auto-ignition temperature (°F):	No data available
Explosion limits (% v/v):	No data available

Solubility:

Solubility in water:	No data available
n-octanol/water coefficient (LogKow):	No data available
Solubility in fat (g/L):	No data available

9.2. Other information:

Thermal stability:	Stable under normal conditions
Evaporation rate (n-butylacetate = 100):	No data available
Other physical and chemical parameters:	No data available.
Surface tension (mN/m):	12.7
Molecular Weight (g/mol):	500

Oxidizing properties: No data available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

No data available.

10.2. Chemical stability:

The product is stable under the conditions, noted in section 7 "Handling and storage".

10.3. Possibility of hazardous reactions, including those associated with foreseeable emergencies:

None known.

10.4. Conditions to avoid:

None Known

10.5. Incompatible materials:

Strong oxidizing agents

10.6. Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects:

▼ Acute toxicity:

Product/substance	Perfluoro compounds, C5-18
Species:	Rat
Route of exposure:	Dermal
Test:	LD50
Result:	>5000 mg/kg

Product/substance	Perfluoro compounds, C5-18
Species:	Rat
Route of exposure:	Inhalation
Test:	LC50 (4 hours)
Result:	5502 mg/m ³

Product/substance	Perfluoro compounds, C5-18
Species:	Rat
Route of exposure:	Oral
Result:	>5000 mg/kg

Based on available data for the mixture, the classification criteria are not met.

▼ Skin corrosion/irritation:

Product/substance	Perfluoro compounds, C5-18
Species:	Rabbit
Result:	No adverse effect observed (Not irritating)

Based on available data for the mixture, the classification criteria are not met.

▼ Serious eye damage/irritation:

Product/substance	Perfluoro compounds, C5-18
Species:	Rabbit
Result:	No adverse effect observed (Not irritating)

Based on available data for the mixture, the classification criteria are not met.

▼ Respiratory sensitisation:

Product/substance Perfluoro compounds, C5-18
Result: For the components(s), either no data are available or the data are not sufficient for the classification.

Based on available data for the mixture, the classification criteria are not met.

▼ Skin sensitisation:

Product/substance Perfluoro compounds, C5-18
Result: For the components(s), either no data are available or the data are not sufficient for the classification.

Based on available data for the mixture, the classification criteria are not met.

▼ Germ cell mutagenicity:

Product/substance Perfluoro compounds, C5-18
Conclusion: No adverse effect observed

Based on available data for the mixture, the classification criteria are not met.

▼ Carcinogenicity:

Product/substance Perfluoro compounds, C5-18
Conclusion: No data available or the data not sufficient for classification.

Based on available data for the mixture, the classification criteria are not met.

▼ Reproductive toxicity:

Product/substance Perfluoro compounds, C5-18
Species: Rat
Duration: per mating into lactation
Test: NOAEL
Result: 1000 mg/kg bw/day
Conclusion: Not Classified

Product/substance Perfluoro compounds, C5-18
Species: Rat
Duration: 28 days
Test: NOAEL
Result: 1000 mg/kg bw/day
Conclusion: Not Classified

Product/substance Perfluoro compounds, C5-18
Species: Rat
Duration: During gestation
Test: NOAEL
Result: 1000 mg/kg bw/day
Conclusion: Not Classified

Based on available data for the mixture, the classification criteria are not met.

▼ STOT-single exposure:

Product/substance Perfluoro compounds, C5-18
Conclusion: No data available or the data not sufficient for classification.

Based on available data for the mixture, the classification criteria are not met.

▼ STOT-repeated exposure:

Product/substance Perfluoro compounds, C5-18
Species: Rat
Route of exposure: Oral

Target organ:	Endocrine system, liver, heart, hematopoietic system, immune system, nervous system, kidney/bladder
Duration:	13 weeks
Test:	NOAEL
Result:	1200 mg/kg bw/day
Conclusion:	Not Classified

Based on available data for the mixture, the classification criteria are not met.

▼ Aspiration hazard:

Product/substance	Perfluoro compounds, C5-18
Conclusion:	No data available or the data is not sufficient for classification.

Based on available data for the mixture, the classification criteria are not met.

Long term effects:

None known.

Other information:

None known.

SECTION 12: ECOLOGICAL INFORMATION

12.1. ▼ Toxicity:

Product/substance	Perfluoro compounds, C5-18
Other information:	None known.

Based on available data for the mixture, the classification criteria are not met.

12.2. Persistence and degradability:

Product/substance	Perfluoro compounds, C5-18
Conclusion:	-
Other information:	None known.

12.3. Bioaccumulative potential:

Product/substance	Perfluoro compounds, C5-18
Conclusion:	No potential for bioaccumulation

12.4. Mobility in soil:

No data available.

12.5. Results of PBT and vPvB assessment:

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Other adverse effects:

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods:

This material can be reclaimed by the manufacturer if required or disposed of at an approved facility according to local regulations.

RCRA Hazardous waste ("P" and "U" list) (40 CFR 261):

None of the components are listed

Specific labelling:

Contaminated packing:

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: TRANSPORT INFORMATION						
	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
DOT	-	-	-	-	-	-
IMDG	-	-	-	-	-	-
IATA	-	-	-	-	-	-

* Packing group

** Environmental hazards

Additional information:

Not dangerous goods according to DOT, IATA and IMDG.

14.6. Special precautions for user:

Not applicable.

14.7. Transport in bulk according to IMO instruments:

No data available.

SECTION 15: REGULATORY INFORMATION

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

15.2. U.S. Federal regulations:

TSCA (the non-confidential portion): Perfluoro compounds, C5-18 is listed

Clean Air Act: None of the components are listed

EPCRA Section 302: None of the components are listed

EPCRA Section 304: None of the components are listed

EPCRA section 313: None of the components are listed

CERCLA: None of the components are listed

Hazardous chemical inventory reporting: This product is not subject to Tier II reporting.

State regulations:

California / Prop. 65: None of the components are listed

Massachusetts / Right To Know Act: None of the components are listed

New Jersey / Right To Know Act: None of the components are listed

New York / Right To Know Act: None of the components are listed

Pennsylvania / Right To Know Act: None of the components are listed

15.4. Restrictions for application:

Restricted to professional users.

15.5. Demands for specific education:

No specific requirements.

15.6. Additional information:

Not applicable.

15.7. Chemical safety assessment:

No

15.8. Sources:

OSHA Hazard Communication Standard (29 CFR 1910.1200)

SECTION 16: OTHER INFORMATION

The full text of identified uses as mentioned in section 1:

None known.

Abbreviations and acronyms:

ACGIH = American Conference of Governmental Industrial Hygienists

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

CAS = Chemical Abstracts Service

CERCLA = Comprehensive Environmental Response Compensation and Liability Act

DOT = Department of Transportation

EINECS = European Inventory of Existing Commercial chemical Substances

EPCRA = Emergency Planning and Community Right-To-Know Act

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

HCIS = Hazardous Chemical Information System

HNOC = Hazards Not Otherwise Classified

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.

("Marpol" = marine pollution)

NFPA = National Fire Protection Association

NIOSH = National Institute for Occupational Safety and Health

OECD = Organisation for Economic Co-operation and Development

OSHA = Occupational Safety and Health Administration

PBT = Persistent, Bioaccumulative and Toxic

RCRA = Resource Conservation and Recovery Act

RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail

RRN = REACH Registration Number

SARA = Superfund Amendments and Reauthorization Act

SCL = A specific concentration limit.

STEL = Short-term exposure limits

STOT-RE = Specific Target Organ Toxicity - Repeated Exposure

STOT-SE = Specific Target Organ Toxicity - Single Exposure

TSCA = The Toxic Substances Control Act

TWA = Time weighted average

UN = United Nations

UVBC = Unknown or variable composition, complex reaction products or of biological materials

VOC = Volatile Organic Compound

vPvB = Very Persistent and Very Bioaccumulative

▼ Additional information:

The classification of the mixture in regard of health hazards is in accordance with the calculation methods given by HCS (29 CFR 1910.1200).

The safety data sheet is validated by:

TMC Industries - QC Department

Other:

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle. The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

Country-language: US-en