SAFETY DATA SHEET - COVER PAGE

Standard SDS begins on the following page.

This page is provided to customers for their assistance and is not part of the Standard Safety Data Sheet.

Product:	**Manufacturer:**
CeramCool CC-110	Engineered Fluids, Inc. 4917 Profit Drive, Tyler, TX 75707 USA +1-725-281-1921

General Description: CeramCool CC-110 is a heat transfer fluid made for cooling electrical components. It's made from a nontoxic, biodegradable synthetic hydrocarbon. .

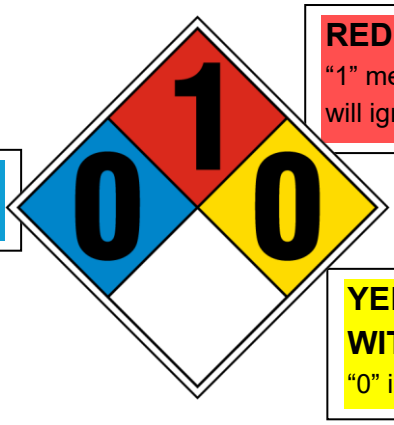
Here is a Quick Guide to Important Information Contained in the SDS:

Characteristic	CC-110	SDS Section
Toxicity	Nontoxic to Humans	Section 11
Handling	Use Personal Protective Equipment	Section 7.1 + 8.2.2
In Case of Spills	Treat as a biodegradable light oil	Section 6
In case of Fire	Treat as a light hydrocarbon oil.	Section 5
Transportation	Not Regulated	Section 14
Biodegradation	Biodegradable	Section 12.2
WGK - Wassergefährdungsklasse **WHC - Water Hazard Class**	WGK =1 (Low Hazard)	Section 15

Emergency Telephone Number: **+1-352-323-3500** Available 24 hours
Factory Telephone Number: **+1-725-218-1981** Available 8-5 CST

National Fire Protection Diamond advisory for CeramCool CC-110 is:

BLUE IS HEALTH HAZARD
"0" is the lowest hazard class



RED is FIRE HAZARD
"1" means that this material will ignite, but with difficulty.

YELLOW IS REACTIVITY WITH OTHER CHEMICALS
"0" indicates that this material is stable

The GHS Communication Standard requires that all hydrocarbon based chemicals be designated a Category 1 Aspiration Hazard if they have a kinematic viscosity ≤ 20.5 cSt. @ 40C. This includes some of our Dielectric Coolants, regardless of all other characteristics (including their biodegradation, non-toxicity, and food grade certification)

These products do not pose a toxicity risk if small amounts are ingested by mouth. However, the standardized wording does not make this differentiation clear and requires the statement even though there is little health risk posed by swallowing. The most probable hazard related to aspiration posed by CC-110 is the inhalation of a "mist" of the product.

Contact Engineered Fluids, Inc. for more information.

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CeramCool CC-110

Safety Data Sheet

COMBINED GHS and REACH SDS according to the following :
REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878 and Ref: CSSS-TCO-010-155483
OSHA Hazard Communication Standard (29 CFR 1910.1200 - GHS Rev 7, May 2024)

Issue Date: 20260101 Revision Date: 20260529

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

1.1. Product identifier

Product form : Liquid Mixture
Product name : CeramCool CC-110

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Electrically Insulating Ceramics Poling Fluid

1.2.2. Uses advised against

Restrictions on use : For professional use only

1.3. Details of the supplier of the safety data sheet

Supplier
Engineered Fluids, Inc.
4917 Profit Drive
Tyler, TX 75707 USA
+1-725-218-1981
support@engineeredfluids.com

E.U. Only Representative:

1.4. Emergency telephone number +1-352-323-3500

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Aspiration hazard, Category 1	H304

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP] Full text of H- and EUH-statements: see section 16

Symbol	Signal Word	Hazard	Hazard statements
NONE	NONE	H413	May cause environmental damage
	DANGER	H304	May be fatal if swallowed and enters airways.

Precautionary statements (CLP)

PREVENTION:

P261: Avoid breathing mist / vapors.

P271: Use only outdoors or in a well-ventilated area.

RESPONSE:

P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P312: Call a POISON CENTRE or doctor/physician if you feel unwell.

P331: Do NOT induce vomiting.

STORAGE:

P405: Store locked up.

2.3. Other hazards : None

SECTION 3: Composition / information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical Name	Registration No.	CAS No.	EC No.	Concentration	Classification	Specific Concentration limits
1-Decene, Dimer, Hydrogenated	01-0000016387-64-0006	68649-11-6	417-060-2	99.7	H304	N/A
2,6-Di-tert-butyl-4-methylphenol		128-37-0	204-881-4	0.3	Aquatic Chronic 4, H413	N/A

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.

First-aid measures after skin contact : After contact with skin, immediately remove contaminated clothing, and wash with plenty of water. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : Remove contact lenses, if present and easy to do. Continue rinsing. Rinse eyes with water as a precaution. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Do not induce vomiting. Call a physician immediately.

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

Symptoms/effects after ingestion : Risk of lung oedema.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media : Do not use a water jet since it may cause the fire to spread.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released. On combustion, forms: carbon oxides (CO and CO2).

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid breathing dust/fume/gas/mist/vapours/spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wear personal protective equipment. Use only in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:
Safety glasses

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing

Hand protection:
Protective gloves should be used. These should be resistant to aliphatic hydrocarbons, with a nitrile rubber coating of at least 0.12 mm thickness. These gloves have a typical measured breakthrough time of >300 minutes. Gloves should be inspected and changed when wear, tearing, punctures or chemical saturation is evident.

8.2.2.3. Respiratory protection

Respiratory protection:
In case of inadequate ventilation wear respiratory protection.

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	clear.
Odour	:	Slight hydrocarbon.
Odour threshold	:	Not available
Freezing point	:	-65
Boiling point	:	>330C
Flammability	:	Not flammable. (Combustible Class 3b)
Explosive limits	:	Not available
Lower explosion limit	:	Not available
Upper explosion limit	:	Not available
Flash point	:	205 C

Auto-ignition temperature	:	Not available
Decomposition temperature	:	350 °C
pH	:	Not available
Viscosity, Kinematic, cSt.@ 40C	:	8.1
Solubility	:	insoluble in water. Water: ≤ 90 ppm (20°C)
Partition coefficient n-octanol/water (Log Kow)	:	>4.82@20C
Vapour pressure at 20°C, kPA	:	0.01
Vapour pressure at 50°C, kPA	:	Not available
Density, g/cc	:	0.8
Relative density	:	0.8
Relative vapour density at 20°C	:	Not available
Particle characteristics	:	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid high temperatures. Heat or source of heat. Incompatible materials.

10.5. Incompatible materials

Oxidising agents.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO2).

SECTION 11: Toxicological information

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

Acute toxicity (oral)	:	Not classified
Acute toxicity (dermal)	:	Not classified

Acute toxicity (inhalation) : Harmful if liquid is inhaled.

CeramCool CC-110	
LD50 oral rat	> 10000 mg/kg
LD50 dermal rabbit	> 10000 mg/kg

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard May be fatal if swallowed and enters airways.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties The substance/mixture has no endocrine disrupting properties.

11.2.2. Other information

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology – general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short–term (acute) : Not classified

Hazardous to the aquatic environment, long–term (chronic) : Not classified

Not rapidly degradable

CeramCool CC-110	
LC50 96h - Fish [1]	> 10000 mg/l
EC50 48h - Crustacea [1]	> 10000 mg/l
EC50 72h - Algae [1]	> 1000 mg/l

12.2. Persistence and degradability

CeramCool CC-110	
Persistence and degradability	Readily Biodegradable

12.3. Bioaccumulative potential

CeramCool CC-110	
Partition coefficient n-octanol/water (Log Kow)	>4.82@20C
Bioaccumulative potential	No bioaccumulation potential.

12.4. Mobility in soil

No additional information available

2.5. Results of PBT and vPvB assessment

CeramCool CC-110
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The substance/mixture has no endocrine disrupting properties.

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

14.6. Special precautions for user

Overland transport
Not regulated

Transport by sea
Not regulated

Air transport
Not regulated

Inland waterway transport
Not regulated

Rail transport
Not regulated

14.7. Maritime transport in bulk according to IMO instruments

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

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	**Applicable on**	**Entry title or description**
3(b)	CeramCool CC-110	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
3(c)	3,5-Bis(1,1-Dimethylethyl)-4-hydroxy benzene propanoic acid branched alkyl (C=7-9) ester -	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

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

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=1 Low Harzard
Storage class (LGK, TRGS 510)	:	LGK 10 - Combustible liquids.

Joint storage table :

LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A
LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B
LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C
LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B
LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13

Joint storage not permitted for : LGK 1, LGK 2A, LGK 5.1A, LGK 6.2, LGK 7.
Joint storage with restrictions permitted for : LGK 4.1A, LGK 4.2, LGK 4.3, LGK 5.1B, LGK 5.1C, LGK 5.2.
Joint storage permitted for : LGK 2B, LGK 3, LGK 4.1B, LGK 6.1A, LGK 6.1B, LGK 6.1C, LGK 6.1D, LGK 8A, LGK 8B, LGK 10, LGK 11, LGK 12, LGK 13, LGK 10-13.
Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

ABM category : Not determined
SZW-lijst van kankerverwekkende stoffen : None of the components are listed
SZW-lijst van mutagene stoffen : None of the components are listed
SZW-lijst van reprotoxische stoffen – Borstvoeding : None of the components are listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : None of the components are listed
SZW-lijst van reprotoxische 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

Switzerland

Storage class (LK) : LK 6.1 - Toxic materials

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association

CeramCool CC-110

Safety Data Sheet

COMBINED GHS and REACH SDS according to the following :
REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878 and Ref: CSSS-TCO-010-155483
OSHA Hazard Communication Standard (29 CFR 1910.1200 - GHS Rev 7, May 2024)

Issue Date: 20260101 Revision Date: 20260529

Abbreviations and acronyms:	
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements:	
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Aquatic Chronic 4	Hazardous to the aquatic environment – Chronic Hazard, Category 4
H304	Aspiration hazard, Category 1
H413	May cause long lasting harmful effects to aquatic life.

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.