



KEMAI Chemical Co.,Ltd.

No.72 Haixin Road,Gulin Industry Zone,Dagang,Bin Hai New Dist,Tianjin P.R.CHINA
Tel: +86 22-24711698 63349929 Fax: +86 22 24379994

Extended Safety Data Sheet
According to Regulation (EC) No 1907/2006, Annex II,
Amended by COMMISSION REGULATION (EU) 2020/878,
According to REGULATION (EC) No 1272/2008

1,2-Dihydro-2,2,4-trimethylquinoline, oligomers

Issue date: 20-05-2013

Version 2.0

Revision date: 18-08-2025

CIRS eSDS Record Number: CSSS-TCO-010-112995

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

1.1 Product identifier:

Identification on the label/Trade name: 1,2-Dihydro-2,2,4-trimethylquinoline, oligomers / TMQ
Additional identification: Nanoform is NOT covered by this eSDS.
Identification of the product: CAS# 26780-96-1 EC# 500-051-3
Index Number: Not available.
REACH registration No.: 01-2119486783-23-****

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

1.2.1 Identified uses:

Production of tyres, general rubber goods and plastic goods
Tyre mounting and dismounting and handling of technical rubber goods
Retreading
Uses of tyres, general rubber goods and plastic goods

1.2.2 Uses advised against:

No uses advised against are identified.

1.3 Details of the supplier of the safety data sheet:

Supplier(Only representative): Chemical Inspection & Regulation Service Limited
Supplier(Manufacturer): KEMAI Chemical Co.,Ltd.
Address: No.72 Haixin Road, Gulin Industry Zone, Dagang, Bin Hai New Dist, Tianjin
P.R.CHINA
Contact person(E-mail): plants@tjkemai.com
Telephone: +86-22-24711698
Fax: +86-22-24379994

1.4 Emergency telephone Number:

+353 (1) 477 3710 Only available during office hours (9:00a.m.-17:30p.m.)

Available outside office hours? YES NO

Section 2 Hazards Identification

2.1 Classification of the substance or mixture:

2.1.1 Classification of the substance:

The substance is classified as following according to REGULATION (EC) No 1272/2008:

REGULATION (EC) No 1272/2008	
Hazard classes/Hazard categories	Hazard statement
Aquatic Chronic 3	H412

2.2 Label elements:

Hazard pictogram(s):	No hazard pictogram is used.
Signal word:	No signal word is used.
Hazard statement(s):	H412: Harmful to aquatic life with long lasting effects.
Precautionary statement(s):	P273: Avoid release to the environment. P501: Dispose of contents/container in accordance with local regulations.
Supplemental Hazard information (EU)	Not applicable.

2.3 Other hazards:

The substance is not PBT / vPvB.

The substance is not identified as having endocrine disrupting properties.

Section 3 Composition/information on ingredients

Substance/Mixture: Substance

Ingredient(s):

Chemical Name	Registration No.	CAS No.	EC No.	Concentration	Specific Concentration limits, M-Factors, Acute Toxicity Estimates (ATE)
1,2-Dihydro-2,2,4-trimethylquinoline, oligomers	01-2119486783-23-****	26780-96-1	500-051-3	100% (w/w)	N/A

Section 4 First aid measures

4.1 Description of first aid measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

4.1.1 In case of inhalation:

Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth to mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

4.1.2 In case of skin contact:

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

4.1.3 In case of eyes contact:

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

4.1.4 In case of ingestion:

Wash out mouth with water. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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

The product is not classified as harmful to human health effect.

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

If skin irritation or rash occurs, get medical advice/attention.

Section 5 Firefighting measures

5.1 Extinguishing media:

Suitable extinguishing media:

In case of fire, use water spray (fog), foam, dry chemical or CO₂.

Unsuitable extinguishing media:

Do not direct a solid stream of water into burning molten polymers due to possibility of spattering and spread of fire.

5.2 Special hazards arising from the substance or mixture

No specific fire or explosion hazard.

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. This material is very toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous combustion products:

Decomposition products may include the following materials: carbon oxides, nitrogen oxides.

5.3 Advice for firefighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel:

Eliminate all sources of ignition. Wear appropriate protective clothing. Avoid breathing vapours. Keep unnecessary people away; isolate hazard area and deny entry. Consider need for evacuation. Stay up wind and keep out of low areas where vapour may accumulate and ignite.

6.1.2 For emergency responders:

Wear an appropriate NIOSH/MSHA approved respirator if vapour is generated.

6.2 Environmental Precautions:

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

6.3 Methods and material for Containment and Cleaning up:

Large spill: Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

Small spill: Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections:

See Section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

Section 7 Handling and storage

7.1 Precautions for safe handling:

7.1.1 Protective measures:

Put on appropriate personal protective equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous.

7.1.2 Advice on general occupational hygiene:

Handle in accordance with good industrial hygiene and safety practice. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking.

7.2 Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations. Store in a dry place. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Recommended: As packaging material use original container.

Remarks: Take precautionary measures against electrostatic discharges.

7.3 Specific end use(s):

Not applicable.

Section 8 Exposure Controls/Personal Protection

8.1 Control parameters:

8.1.1 Occupational exposure limits: Not available.

8.1.2 Additional exposure limits under the conditions of use: Not available.

8.1.3 DNEL/DMEL and PNEC-Values:

Workers - Hazard via inhalation route	Systemic effects-Long term exposure	DNEL=7 mg/m ³
Workers - Hazard via dermal route	Systemic effects-Long term exposure	DNEL=1 mg/kg bw/day
General Population - Hazard via inhalation route	Systemic effects-Long term exposure	DNEL=1.8 mg/m ³
General Population - Hazard via dermal route	Systemic effects-Long term exposure	DNEL=0.6 mg/kg bw/day
General Population - Hazard via oral route	Systemic effects-Long term exposure	DNEL=0.6 mg/kg bw/day
Hazard for aquatic organisms	Freshwater	PNEC=0.056 mg/L
Hazard for aquatic organisms	Marine water	PNEC=0.006 mg/L
Hazard for aquatic organisms	STP	PNEC=100 mg/L
Hazard for aquatic organisms	Sediment (freshwater)	PNEC=21 mg/kg sediment dw
Hazard for aquatic organisms	Sediment (marine water)	PNEC=2.1 mg/kg sediment dw
Hazard for terrestrial organisms	Soil	PNEC=4.2 mg/kg soil dw
Hazard for predators	Secondary poisoning	PNEC= 8 mg/kg food

8.2 Exposure controls:

8.2.1 Appropriate engineering controls:

Local exhaust ventilation as necessary to control any air contaminants to within during the use of this product. Adequate ventilation should be provided to keep dust concentrations below acceptable exposure limits. Discharge from the ventilation system should comply with the applicable air pollutions control regulations. Eliminate ignition sources.

8.2.2 Individual protection measures, such as personal protective equipment:

Eye/face protection: Safety goggles.

Skin protection

Hand protection:

Wear gloves with breakthrough times >480 minutes: Nitrile rubber gloves. Butyl rubber gloves. (complying to EN 374-3) The exact choice of glove type depends

Body protection:	on the type of work being undertaken. Gloves should be chosen in consultation with a glove manufacturer and after a full assessment of the working conditions. Gloves should be replaced regularly.
Respiratory protection:	Standard work wear and safety boots for normal handling and use. Use with adequate ventilation. In case of insufficient local exhaust ventilation and/or handling with open equipment: Respiratory air fed breathing apparatus if there is a risk of exposure to high vapour concentrations. If using a half mask: organic vapour cartridge Ax type.
Thermal hazards:	Wear suitable protective clothing to prevent heat.
8.2.3 Environmental exposure controls:	Avoid discharge into the environment. According to local regulations, Federal and official regulations.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Appearance:	Solid pastille
Colour:	Light brown
Odour:	Faint, aromatic
Odour threshold:	Not available
pH:	Not available
Melting point/range (°C):	48 °C
Boiling point/range (°C):	No boiling point 1,2-Dihydro-2,2,4-trimethylquinoline, oligomers was observed up to 280°C at 1 013 hPa at which decomposition started (Currenta, 2010).
Flash point (°C):	180 °C at 1 013 hPa
Evaporation rate:	Not available
Flammability limit - lower (%):	Not available
Flammability (solid, gas):	Not readily combustible solid
Ignition temperature (°C):	Not available
Upper/lower explosive limits:	Not available
Vapour pressure (20°C):	< 4.8*10 ⁻⁶ hPa at 25 °C
Vapour density:	Not available
Relative Density:	1.042 at 20 °C
Bulk density (kg/m³):	600 - 630
Water solubility (g/l):	The water solubility of TMQ was determined by using column elution method to be < 2.5 mg/l at 23 °C and pH 5 and < 3.2 mg/l at 23 °C and pH 9 (Monsanto, 1980). However, as a mixture of oligomer derivatives TMQ is mostly insoluble.
n-Octanol/Water (log Po/w):	In the range of 1.2 to 7.7 at pH 6.3 and 25 °C with an average of 5.8 was determined (Currenta, 2010).
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity, dynamic (mPa.s):	Not available
Explosive properties:	Not applicable
Oxidising properties:	Not applicable
Molecular Formula:	(C ₁₂ H ₁₅ N) _x
Molecular Weight:	>= 173.3 - <= 2 000

9.2. Other information:

Fat solubility(solvent-oil to be specified)	Not available
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etc:

Surface tension:	Not available
Dissociation constant in water(pKa):	Based on the estimated pKa-range (4.2- 5.0) under environmental conditions (pH 5 - 9) this substance is mainly present in undissociated form (Currenta, 2010).
Oxidation-reduction Potential:	Not available

Section 10 Stability and reactivity

10.1 Reactivity:	The substance is stable under normal storage and handling conditions.
10.2 Chemical stability:	The product is stable when stored at room temperature in closed, original container. Stable under normal conditions of handling, use and transportation.
10.3 Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid:	Incompatible materials. Keep away from heat, sparks and flame.
10.5 Incompatible materials:	Oxidizing agents. Strong acids. Strong bases.
10.6 Hazardous decomposition products:	Thermal decomposition products: Irritating fumes, oxides of carbon and oxides of nitrogen.

Section 11 Toxicological information

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

Acute toxicity:	
LD50(Oral, Rat):	3190 mg/kg bw
LD50(Dermal, Rabbit):	> 5100 mg/kg bw
LC50(Inhalation, Rat):	Not available
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
STOT- single exposure:	Not classified
STOT-repeated exposure:	Not classified
Aspiration hazard:	Not classified

11.2 Information on other hazards

Endocrine disrupting properties	The substance is not identified as having endocrine disrupting properties.
Other information	Not applicable

Section 12 Ecological information

12.1 Toxicity:

Acute (short-term) toxicity:	
LC50(96h, Fish):	>= 100 mg/L
LC50(48h, Crustacea):	56 mg/L
EC50(72h, Algae/aquatic plants):	>= 100 mg/L
Chronic (long-term) toxicity:	
NOEC(Fish):	Not available
NOEC(Crustacea):	Not available
EC50(Algae/aquatic plants):	Not available

12.2 Persistence and degradability:	Not readily biodegradable.
12.3 Bioaccumulative potential:	TMQ can be considered as bioaccumulative.
12.4 Mobility in soil:	Not available.
12.5 Results of PBT and vPvB assessment:	The substance is not PBT / vPvB.
12.6 Endocrine disrupting properties:	The substance is not identified as having endocrine disrupting properties.
12.7 Other adverse effects:	Harmful to aquatic life with long lasting effects.
12.8 Additional information	Not available.

Section 13 Disposal considerations

13.1 Waste treatment methods:	Dispose of in accordance with all applicable local and national regulations. Use recovery/recycling where feasible, otherwise incineration is the recommended method of disposal. Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near to the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers.
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Section 14 Transport information

	Land transport (ADR/RID)	Inland waterways (ADN)	Sea transport (IMDG)	Air transport (ICAO/IATA)
14.1 UN number or ID number	Not regulated	Not regulated	Not regulated	Not regulated
14.2 UN Proper shipping name	Not regulated	Not regulated	Not regulated	Not regulated
14.3 Transport hazard Class(es)	Not regulated	Not regulated	Not regulated	Not regulated
14.4 Packing group	Not regulated	Not regulated	Not regulated	Not regulated
14.5 Environmental hazards	No	No	No	No
14.6 Special precautions for user	See section 2.2	See section 2.2	See section 2.2	See section 2.2
14.7 Maritime transport in bulk according to IMO instruments	Not regulated	Not regulated	Not regulated	Not regulated

Section 15 Regulatory information

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

Relevant information regarding authorization:	Not applicable.
Relevant information regarding restriction:	Not applicable.
Other EU regulations:	Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.

Other National regulations:

Not applicable

15.2 Chemical safety assessment

YES

NO

Section 16 Other information

16.1 Indication of changes:

Version 1.0 Amended by (EU) 2020/878

Version 2.0 Exposure scenarios are placed after section 16.

16.2 Abbreviations and acronyms:

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

RID: Regulation for rail International transportation of Dangerous goods

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: Code international maritime dangerous goods code

ICAO: International Civil Aviation Organization

IATA: International Air Transport Association

LC50: median lethal concentration

EC50: The effective concentration of substance that causes 50% of the maximum response.

NOEC: No Observed Effect Concentration

DNEL: derived no-effect level

PNEC: predicted no-effect concentration

16.3 Key literature references and sources for data

ECHA Registered substances data

16.4 Classification and procedure used to derive the classification for mixtures according to Regulation (EC)

1272/2008 [CLP]

Classification according to Regulation (EC) No. 1272/2008		Classification procedure
Aquatic Chronic 3	H412	On basis of test data

16.5 Relevant H-statements (number and full text):

H412: Harmful to aquatic life with long lasting effects.

16.6 Training instructions:

Not applicable.

16.7 Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

16.8 Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Author: Hangzhou REACH Technology Group Co., Ltd. Website: www.cirs-group.com Tel: 0571-87206555 Email: info@cirs-group.com

The exposure scenario section is extracted from the CSR.