

SAFETY DATA SHEET

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

1.1. Product identifier

Trade name or designation of the mixture	AFE-CA GREASE
Registration number	-
Synonyms	None.
SDS number	1030-T21998-2
Product code	AFE-CA+70, AFE-CA+400
Issue date	17-February-2012
Version number	05
Revision date	20-June-2023
Supersedes date	04-December-2022

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

Identified uses	Industrial lubricating grease
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

THK Co.,LTD	HEAD OFFICE: 2-12-10, Shibaura, Minato-ku, Tokyo 108-8506 Japan
THK UK	Suite W6, Harbour Buildings West, The Waterfront, Brierley Hill, West Midlands, DY5 1LN, U.K.
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THK GmbH	Kaiserswerther Strasse 115, D-40880 Ratingen, Germany
Telephone	+49(0)2102-7425-555
E-mail	info-msds@thk.eu (THK GmbH), thk022@thk.co.jp (THK Co., LTD)

1. 4 Emergency telephone number	+44(0)1384 471550 at workday 8 am - 5 pm (THK UK office) +49(0)2102-7425-222 at local workday time 8 am- 5 pm (THK GmbH)
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards		
Skin sensitisation	Category 1	H317 - May cause an allergic skin reaction.
Environmental hazards		
Hazardous to the aquatic environment, long-term aquatic hazard	Category 4	H413 - May cause long lasting harmful effects to aquatic life.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Dihydro-3-(tetrapropenyl)furan-2,5-dione

Hazard pictograms



Signal word: Warning

Hazard statements

H317	May cause an allergic skin reaction.
H413	May cause long lasting harmful effects to aquatic life.

Precautionary statements

Prevention

P261 Avoid breathing mist/vapours.
P273 Avoid release to the environment.
P280 Wear protective gloves.

Response

P302 + P352 IF ON SKIN: Wash with plenty of water.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage None.

Disposal None.

Supplemental information on the label None.

2.3. Other hazards This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
3,3'-Diocadecyl -1,1'-methylenebis (4,1-phenylene) diurea	20 - 30	43136-14-7 406-690-3	-	616-095-00-2	
Classification: Aquatic Chronic 4;H413					
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	0.5 - 1.5	68411-46-1 270-128-1	-	-	
Classification: Aquatic Chronic 3;H412					
Dihydro-3-(tetrapropenyl)furan-2,5-dione	0.3 - 0.7	26544-38-7 247-781-6	01-2119979080-37-xxxx	-	
Classification: Eye Irrit. 2;H319, Skin Sens. 1A;H317, Aquatic Chronic 4;H413					

Composition comments Base oils: Contains less than 3 % DMSO extract as measured by IP 346.
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Components not listed are either non-hazardous or are below reportable limits. The exact concentrations of the above listed chemicals are being withheld as a trade secret. The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

4.1. Description of first aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.
Eye contact Rinse with water. Get medical attention if irritation develops and persists.
Ingestion Rinse mouth. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed May cause an allergic skin reaction. Dermatitis. Rash.

4.3. Indication of any immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards Will burn if involved in a fire.

5.1. Extinguishing media

Suitable extinguishing media Extinguish with foam, carbon dioxide or dry powder.
Unsuitable extinguishing media Do not use water or halogenated extinguishing media.

5.2. Special hazards arising from the substance or mixture Thermal decomposition may produce smoke, oxides of carbon and lower molecular weight organic compounds whose composition have not been characterised.

5.3. Advice for firefighters

Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special fire fighting procedures

Use water spray to cool unopened containers. Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear appropriate protective equipment and clothing during clean-up. In case of spills, beware of slippery floors and surfaces.

For emergency responders

Keep unnecessary personnel away. Ensure adequate ventilation. Be aware of potential for surfaces to become slippery. Local authorities should be advised if significant spillages cannot be contained.

6.2. Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

The product is insoluble in water and will spread on the water surface. Prevent product from entering drains. Stop the flow of material, if this is without risk. Following product recovery, flush area with water.

6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid breathing mist/vapours. When working with heated grease, mechanical ventilation may be required. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Avoid prolonged and repeated contact with grease, particularly used grease. Wear appropriate personal protective equipment. Avoid release to the environment. Be aware of potential for surfaces to become slippery. Always remove grease with soap and water or skin cleaning agent, never use organic solvents. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

7.3. Specific end use(s)

Industrial lubricating grease. Observe industrial sector guidance on best practices.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

No exposure limits noted for ingredient(s).

Biological limit values

No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no effect levels (DNELs)

Workers

Components	Value	Assessment factor	Notes
Dihydro-3-(tetrapropenyl)furan-2,5-dione (CAS 26544-38-7)			
Long-term, Systemic, Dermal	0.33 mg/kg bw/day	150	Repeated dose toxicity

Predicted no effect concentrations (PNECs)

Components	Value	Assessment factor	Notes
Dihydro-3-(tetrapropenyl)furan-2,5-dione (CAS 26544-38-7)			
Freshwater	0.02 mg/l	1000	
Marine water	0.002 mg/l	10000	
Sediment (freshwater)	1.7 mg/kg		
Sediment (marine water)	0.17 mg/kg		
Soil	0.2 mg/kg		
STP	10 mg/l	10	

8.2. Exposure controls

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

General information

Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection	Wear safety glasses with side shields (or goggles). Face shield is recommended. Use eye protection conforming to EN 166.
Skin protection	
- Hand protection	Wear protective gloves. Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependant on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognise that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement rules are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependant on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove manufacturer and model. Suitable gloves can be recommended by the glove supplier.
- Other	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	In case of inadequate ventilation, when the product is heated, or risk of inhalation of oil mist, use suitable respiratory equipment with gas filter (type A2). Follow guidance on selection, use, care and maintenance in accordance with EN 529.
Thermal hazards	When material is heated, wear gloves to protect against thermal burns.
Hygiene measures	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.
Environmental exposure controls	Inform appropriate managerial or supervisory personnel of all environmental releases. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state	Solid.
Form	Paste.
Colour	Light brown.
Odour	Slight.
Odour threshold	Not available.
pH	Material is non soluble in water.
Melting point/freezing point	258 °C (496.4 °F)
Initial boiling point and boiling range	Property has not been measured.
Flash point	220 °C (428 °F) Setflash
Evaporation rate	Not applicable, material is a solid.
Flammability (solid, gas)	Will burn if involved in a fire.

Upper/lower flammability or explosive limits

Explosive limit - lower (%)	Property has not been measured.
Explosive limit – upper (%)	Property has not been measured.
Vapour pressure	Not applicable, material is a solid.
Vapour density	Not applicable, material is a solid.
Relative density	0.98
Solubility(ies)	
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not applicable, product is a mixture.
Auto-ignition temperature	Not applicable, material is a solid.
Decomposition temperature	Not applicable as the product is not unstable.

Viscosity	Not applicable, material is a solid.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
9.2. Other information	
Density	Property has not been measured.
Kinematic viscosity	Not applicable, material is a solid.

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	Will not occur.
10.4. Conditions to avoid	Heat, sparks, flames, elevated temperatures. Contact with incompatible materials.
10.5. Incompatible materials	Strong oxidising agents.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
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Information on likely routes of exposure

Inhalation	Inhalation of oil mist or vapours formed during heating of the product will irritate the respiratory system and provoke coughing.
Skin contact	May cause an allergic skin reaction.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms	May cause an allergic skin reaction. Dermatitis. Rash.
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11.1. Information on toxicological effects

Acute toxicity	The harmful effects may increase when exposed to used grease.
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Components	Species	Test Results
Dihydro-3-(tetrapropenyl)furan-2,5-dione (CAS 26544-38-7)		
Acute		
Dermal		
LD100	Rabbit	6200 - 7500 mg/kg
Inhalation		
LC50	Rat	> 5.3 mg/l, 4 hours
Oral		
LD50	Rat	2.9 g/kg
Skin corrosion/irritation	Due to partial or complete lack of data the classification is not possible.	
Serious eye damage/eye irritation	Due to partial or complete lack of data the classification is not possible.	
Respiratory sensitisation	Due to partial or complete lack of data the classification is not possible.	
Skin sensitisation	May cause an allergic skin reaction.	
Skin Sensitisation		
Dihydro-3-(tetrapropenyl)furan-2,5-dione (CAS 26544-38-7)	Result: A category member, 2-Dodecenyl-1-yl succinic anhydride, was tested in three standard sensitization protocols, the guinea pig maximization test, adjuvant and patch test and Buehler test. The substance was positive in all three tests.	
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.	
Mutagenicity		
Dihydro-3-(tetrapropenyl)furan-2,5-dione (CAS 26544-38-7)	OECD Test Guideline 471 Result: Negative. Species: Bacteria	
Carcinogenicity	Prolonged and repeated contact with used oil may cause serious skin diseases, such as dermatitis and skin cancer.	
Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.	

Reproductivity

Dihydro-3-(tetrapropenyl)furan-2,5-dione (CAS 26544-38-7)

OECD Test Guideline 421

Result: No reproductive effects were observed in parental reproductive organs or performance after exposure to tripropenyl succinic anhydride.

Species: Rat

Specific target organ toxicity - single exposure Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure Due to partial or complete lack of data the classification is not possible.

Dihydro-3-(tetrapropenyl)furan-2,5-dione (CAS 26544-38-7) Result: NOAEL for a 28-day repeated dose study of a chemical category member, TSA, was 50 mg/kg bw/d.

Aspiration hazard Due to the physical form of the product it is not expected to be an aspiration hazard.

Mixture versus substance information No information available.

Other information No other specific acute or chronic health impact noted.

SECTION 12: Ecological information

12.1. Toxicity May cause long lasting harmful effects to aquatic life.

Components	Species		Test Results
Dihydro-3-(tetrapropenyl)furan-2,5-dione (CAS 26544-38-7)			
Aquatic			
Algae	ErC50	Algae	110 mg/l (loading rate)
Crustacea	EC50	Daphnid	> 100 mg/l, 48 hours
Fish	LC50	Fish	> 100 mg/l, 96 hours (loading rate)

12.2. Persistence and degradability None known.

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water (log Kow)

Dihydro-3-(tetrapropenyl)furan-2,5-dione (CAS 26544-38-7) > 4.39

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil No data available.

12.5. Results of PBT and vPvB assessment This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

12.6. Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code	20 01 26* The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

14.7. Transport in bulk Not applicable.
according to Annex II of
MARPOL 73/78 and the IBC
Code

SECTION 15: Regulatory information

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

Retained direct EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended
- Conditions of restriction given for the associated entry number should be considered

3,3'-Diocetadecyl -1,1'-methylenebis (4,1-phenylene) diurea (CAS 43136-14-7)

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Other regulations

This product is classified and labelled in accordance with the retained CLP Regulation (EC) No 1272/2008, as amended for Great Britain. This Safety Data Sheet is compiled in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758.

Use of this product by young persons under the age of 18 is not allowed in accordance with the Management of Health and Safety at Work Regulations 1999 [SI 1999/3242], as amended. Follow the requirements of the Control of Substances Hazardous to Health Regulations 2002 [SI 2002/2677], as amended, when using this material.

15.2. Chemical safety assessment No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS: Chemical Abstract Service.
CEN: European Committee for Standardization.
EC50: Effective Concentration, 50%.
ErC50: EC50 in terms of reduction of growth rate.
IATA: International Air Transport Association.
IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.
IMDG: International Maritime Dangerous Goods.
LC50: Lethal Concentration, 50%.

	LD50: Lethal Dose, 50%.
	LD100: Lethal Dose, 100%.
	MARPOL: International Convention for the Prevention of Pollution from Ships.
	PBT: Persistent, bioaccumulative and toxic.
	RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
	vPvB: Very persistent and very bioaccumulative.
References	ECHA: European Chemical Agency.
	EPA: AQUIRE database
	HSDB® - Hazardous Substances Data Bank
	IARC Monographs. Overall Evaluation of Carcinogenicity
Information on evaluation method leading to the classification of mixture	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Full text of any statements, which are not written out in full under sections 2 to 15	H317 May cause an allergic skin reaction.
	H319 Causes serious eye irritation.
	H412 Harmful to aquatic life with long lasting effects.
	H413 May cause long lasting harmful effects to aquatic life.
Training information	Follow training instructions when handling this material.
Issued by	THK Co.,LTD
	HEAD OFFICE: 2-12-10, Shibaura, Minato-ku, Tokyo 108-8506
	Japan
Disclaimer	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.
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