

SAFETY DATA SHEET

1. Identification

Product identifier AFG GREASE

Other means of identification

SDS number 1030-T21997-2

Product code AFG+70, AFG+400

Recommended use Industrial lubricating grease

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

THK Co.,LTD
HEAD OFFICE: 2-12-10, Shibaura, Minato-ku, Tokyo 108-8506 Japan
THK America, Inc.: 200 E. Commerce Drive, Schaumburg, IL 60173, U.S.A.
Telephone: (847) 310-1111 (THK America) between the hours of 8 am - 5 pm
Emergency telephone: (847) 310-1111 (THK America) between the hours of 8 am - 5 pm
E-mail: chicago@thk.com, thk022@thk.co.jp

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Hazardous to the aquatic environment, acute Category 3 hazard

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement Harmful to aquatic life.

Precautionary statement

Prevention Avoid release to the environment.

Response None.

Storage None.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
3,3'-dicyclohexyl-1,1'-methylenebis (4,1-phenylene)diurea	Proprietary	< 8
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	Proprietary	1 - 5
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	Proprietary	1 - 2
Sodium nitrite	Proprietary	0.5 - 1.8

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.

4. First-aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed

Treat symptomatically.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media

Extinguish with foam, carbon dioxide or dry powder.

Unsuitable extinguishing media

Do not use water or halogenated extinguishing media.

Specific hazards arising from the chemical

Thermal decomposition may produce smoke, oxides of carbon and lower molecular weight organic compounds whose composition have not been characterized.

Special protective equipment and precautions for firefighters

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

Fire fighting equipment/instructions

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

General fire hazards

Will burn if involved in a fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. In case of spills, beware of slippery floors and surfaces. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

The product is insoluble in water and will spread on water surfaces. Prevent product from entering drains. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

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.

7. Handling and storage

Precautions for safe handling

Avoid prolonged and repeated contact with grease, particularly used grease. Provide adequate ventilation. When working with heated grease, mechanical ventilation may be required. 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.

Conditions for safe storage, including any incompatibilities

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

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Base oils	PEL	5 mg/m3	Mist.
		2000 mg/m3	
		500 ppm	
Molybdenum compounds	PEL	5 mg/m3	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Base oils	TWA	5 mg/m3	Inhalable fraction.
Molybdenum compounds	TWA	0.5 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Base oils	Ceiling	1800 mg/m3	
	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.

Biological limit values

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

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**Eye/face protection**

Wear safety glasses with side shields (or goggles).

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 dependent 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 moisturizer 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 recognize 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 dependent 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.

Skin protection**Other**

Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection

In case of inadequate ventilation or risk of inhalation of oil mist, suitable respiratory equipment with particulate filter and organic vapor cartridges can be used. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.

Thermal hazards

When material is heated, wear gloves to protect against thermal burns.

General hygiene considerations

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.

9. Physical and chemical properties**Appearance****Physical state**

Solid.

Form

Buttery.

Color

Brown.

Odor

Mild.

Odor threshold

Not available.

pH

Material is non soluble in water.

Melting point/freezing point

Property has not been measured.

Initial boiling point and boiling range

Property has not been measured.

Flash point

393.8 °F (201 °C) Setaflash Closed Cup (ISO 3679)

Evaporation rate	Not available.
Flammability (solid, gas)	Not flammable. Will burn if involved in a fire.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not applicable, material is a solid.
Explosive limit - upper (%)	Not applicable, material is a solid.
Vapor pressure	Not applicable, material is a solid.
Vapor density	Not applicable, material is a solid.
Relative density	0.9
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 available.
Other information	
Explosive properties	Not explosive.
Kinematic viscosity	Not applicable, material is a solid.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Heat, sparks, flames, elevated temperatures. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides. Nitrogen oxides. Sulfur oxides. Sodium oxides. Phosphorus oxides. Calcium oxides. Silicon oxides. Aluminum oxides. Formaldehyde. PAH (polycyclic aromatic hydrocarbons).

11. Toxicological information

Information on likely routes of exposure

Inhalation	Inhalation of oil mist or vapors formed during heating of the product will irritate the respiratory system and provoke coughing.
Skin contact	Prolonged skin contact may cause irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity	The harmful effects may increase when exposed to used grease.
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Components	Species	Test Results
Sodium nitrite (CAS Proprietary)		
<u>Acute</u>		
Inhalation		
LC50	Rat	5.5 mg/l, 4 Hours
Oral		
LD50	Rat	158 mg/kg
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.	

Respiratory or skin sensitization

Respiratory sensitization None known.

Skin sensitization None known.

Germ cell mutagenicity None known.

Carcinogenicity Prolonged and repeated contact with used oil may cause serious skin diseases, such as dermatitis and skin cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity None known.

Specific target organ toxicity - single exposure None known.

Specific target organ toxicity - repeated exposure None known.

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

12. Ecological information

Ecotoxicity Harmful to aquatic life.

Components		Species	Test Results
Sodium nitrite (CAS Proprietary)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Greasyback shrimp (Metapenaeus ensis)	16.14 - 26.61 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.15 - 0.25 mg/l, 96 hours

Persistence and degradability None known.

Bioaccumulative potential None known.

Mobility in soil The product is insoluble in water and will spread on water surfaces.

Other adverse effects Greases are generally hazardous to the environment.

13. Disposal considerations

Disposal instructions Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. 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.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products 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.

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.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Sodium nitrite (CAS Proprietary) 0.1 % One-Time Export Notification only.

CERCLA Hazardous Substance List (40 CFR 302.4)

Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (CAS Proprietary) Listed.

Sodium nitrite (CAS Proprietary) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA)

One or more components of the mixture are not on the TSCA 8(b) inventory or are designated "inactive".

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	Proprietary	1 - 2
Sodium nitrite	Proprietary	0.5 - 1.8

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.

US state regulations

US. Massachusetts RTK - Substance List

Sodium nitrite (CAS Proprietary)

US. New Jersey Worker and Community Right-to-Know Act

Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (CAS Proprietary)

Sodium nitrite (CAS Proprietary)

US. Pennsylvania Worker and Community Right-to-Know Law

Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (CAS Proprietary)

Sodium nitrite (CAS Proprietary)

US. Rhode Island RTK

Not regulated.

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	No
Canada	Domestic Substances List (DSL)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

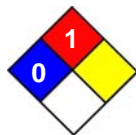
*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	11-January-2023
Revision date	-
Version #	01
HMIS® ratings	Health: 0 Flammability: 1 Physical hazard: 0 Personal protection: B

NFPA ratings



List of abbreviations

CAS: Chemical Abstract Service.
Ceiling: Short Term Exposure Limit Ceiling value.
DOT: Department of Transportation (49 CFR 172.101).
EC50: Effective Concentration, 50%.
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%.
MARPOL: International Convention for the Prevention of Pollution from Ships.
PEL: Permissible Exposure Limit.
STEL: Short term exposure limit.
TWA: Time Weighted Average.

References

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
EPA: AQUIRE database
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity

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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