

Section 1. Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product Identity JP-DX2 Thermal Grease
Alternate Names JP-DX2 Thermal Grease

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

Intended use See Technical Data Sheet.
Application Method See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name JunPus International Co., Ltd.
4F., NO.101, Ningsia Road Datong District, Taipei City
Customer Service: JunPus International Co., Ltd. service +886 2 2553 9932

1.4. Emergency telephone number

Emergency
24 hour Emergency Telephone No. office +886 2 2553 9932

2. Hazard(s) identification**2.1. Classification of the substance or mixture**

Aquatic Acute 1;H400 Very toxic to aquatic life.
Aquatic Chronic 1;H410 Very toxic to aquatic life with long lasting effects.

2.2. Label elements**Warning**



Safety Data Sheet

JP-DX2 Thermal Grease

SDS Revision Date: 12/03/2022

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

[Prevention]:

P273 Avoid release to the environment.

[Response]:

P391 Collect spillage.

[Storage]:

No GHS storage statements

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Zinc oxide CAS Number: 0001314-13-2	30-40	Aquatic Acute 1;H400 Aquatic Chronic 1;H410	[1][2]
Aluminum dioxide CAS Number: 0011092-32-3	30-40	Not Classified	[1]
Aluminum powder (Al) (stabilized) CAS Number: 0007429-90-5	20-25	Flam. Sol. 1;H228 WaterReact. 2;H261	[1][2]
Dimethyl silicone CAS Number: 0009006-65-9	8-15	Not Classified	[1]
Boron nitride (BN) CAS Number: 0010043-11-5	5 - 10	Not Classified	[1]

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

Section 4. First aid measures

4.1. Description of first aid measures

General	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious, place in the recovery position and obtain immediate medical attention. Give nothing by mouth.
Eyes	Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.
Skin	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.
Ingestion	If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

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

Overview	No specific symptom data available. Treat symptomatically. See section 2 for further details.
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Section 5. Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO₂, powder, water spray.

Do not use: water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: No hazardous decomposition data available.

5.3. Advice for fire-fighters

As with all fires, wear positive pressure, self-contained breathing apparatus, (SCBA) with a full face piece and protective clothing. Persons without respiratory protection should leave area. Wear SCBA during clean-up immediately after fire. No smoking.

ERG Guide No. ---

Section 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Ventilate the area and avoid breathing vapors. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, and vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations.

Section 7. Handling and storage

7.1. Precautions for safe handling

Handle containers carefully to prevent damage and spillage.

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Incompatible materials: No data available.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

Section 8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0001314-13-2	Zinc oxide	OSHA	TWA 5 mg/m3 (fume) TWA 15 mg/m3 (total dust) TWA 5 mg/m3 (resp dust)
		ACGIH	TWA: 2 mg/m3 STEL: 10 mg/m3
		NIOSH	No Established Limit
0007429-90-5	Aluminum powder (Al) (stabilized)	OSHA	TWA 15 mg/m3 (total) TWA 5 mg/m3 (resp)
		ACGIH	TWA: 1.0 mg/m3
		NIOSH	TWA 10 mg/m3 (total) TWA 5 mg/m3 (resp)
0009006-65-9	Dimethyl silicone	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
0010043-11-5	Boron nitride (BN)	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
0011092-32-3	Aluminum dioxide	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit

8.2. Exposure controls

Respiratory If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes Protective safety glasses recommended

Skin Protective gloves recommended.

Engineering Controls Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to

maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details.

Section 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Paste
Odor	Not determined
Odor threshold	Not determined
pH	6.1
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	Not Measured
Flash Point	Not Measured
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured Upper Explosive Limit: Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	Not Measured
Solubility in Water	Not Measured
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured

9.2. Other information

No other relevant information.

Section 10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

No data available.

10.6. Hazardous decomposition products

No hazardous decomposition data available.

Section 11. Toxicological information

Acute toxicity

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Zinc oxide - (1314-13-2)	> 5,000.00, Rat - Category: NA	Not Available	Not Available	2.50, Mouse - Category: 4	Not Available
Aluminum dioxide - (11092-32-3)	Not Available	Not Available	Not Available	Not Available	Not Available
Aluminum powder (Al) (stabilized) - (7429-90-5)	15,900.00, Rat - Category: NA	Not Available	Not Available	Not Available	Not Available
Dimethyl silicone - (9006-65-9)	Not Available	Not Available	Not Available	Not Available	Not Available



Safety Data Sheet

JP-DX2 Thermal Grease

SDS Revision Date: 12/03/2022

Boron nitride (BN) - (10043-11-5)	> 5,000.00, Rat - Category: NA	Not Available	Not Available	Not Available	Not Available
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Carcinogen Data

CAS No.	Ingredient	Source	Value
0001314-13-2	Zinc oxide	OSHA	Regulated Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0007429-90-5	Aluminum powder (Al) (stabilized)	OSHA	Regulated Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0009006-65-9	Dimethyl silicone	OSHA	Regulated Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0010043-11-5	Boron nitride (BN)	OSHA	Regulated Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0011092-32-3	Aluminum dioxide	OSHA	Regulated Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable

Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

Section 12. Ecological information

12.1. Toxicity

Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Zinc oxide - (1314-13-2)	3.969, Danio rerio	1.10, Daphnia magna	0.042 (72 hr), Pseudokirchneriella subcapitata
Aluminum dioxide - (11092-32-3)	Not Available	Not Available	Not Available
Aluminum powder (Al) (stabilized) - (7429-90-5)	6.17, Oncorhynchus mykiss	0.72, Ceriodaphnia dubia	0.35 (72 hr), Pseudokirchneriella subcapitata
Dimethyl silicone - (9006-65-9)	Not Available	Not Available	Not Available
Boron nitride (BN) - (10043-11-5)	Not Available	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

Section 13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

Section 14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Regulated	Not Regulated	Not Regulated
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	DOT Hazard Class: Not Applicable Sub Class: Not Applicable	IMDG: Not Applicable Sub Class: Not Applicable	Air Class: Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable
14.5. Environmental hazards			
IMDG	Marine Pollutant: Yes; (Zinc oxide)		
14.6. Special precautions for user	No further information		

Section 15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Toxic Substance Control Act (TSCA) All components of this material are either listed or exempt from listing on the TSCA Inventory.

US EPA Tier II Hazards **Fire:** No

Sudden Release of Pressure: No

Reactive: Yes

Immediate (Acute): No

Delayed (Chronic): No

EPCRA 302 Extremely Hazardous:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals:

Aluminum powder (Al) (stabilized)

Zinc oxide

Proposition 65 - Carcinogens (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 Label Warning:

This product contains no chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 16. Other information



Safety Data Sheet

JP-DX2 Thermal Grease

SDS Revision Date: 12/03/2022

SDS Revision Date 12/06/2018

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H228 Flammable solid.

H261 In contact with water releases flammable gases.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

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