

HIWIN G03 SDS

(Safety Data Sheet)

Features

1. Low dust generate characteristics and suitable for clean room environment
2. Well wear resistance and wear protection for components
3. long term grease, well wear resistance under high speed conditions
4. Low starting and running torques particularly at low temperatures, to ensure high efficiency and conserve energy
5. compatible with plastic components

Pack sizes



Basic properties

HIWIN G03		
Consistency enhancer		Special calcium soap
Color		Beige
Basic oil		Synthetic hydrocarbon oil
Service temperature range (°C)		-45 to 125
NLGI Grade		2
Viscosity (cst/40°C)		30
Drop point (°C)		>210
4-ball test	Wear scar diameter (µm) (ASTM D2266)	366
Origin		Germany

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

- ◆ **Product details**

Trade name: HIWIN G03

Application of the substance / the preparation: Grease

Manufacturer/Supplier: HIWIN TECHNOLOGIES CORP.

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Tel.: +886-4-23594510 **Fax:** +886-4-23594420

Information in case of emergency: +886-4-23594510

2. Hazards identification

- ◆ **Classification of the substance or mixture**

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

Classification (67/548/EEC, 1999/45/EC)

Not a hazardous substance or mixture.

- ◆ **Label elements**

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

Additional Labelling:

EUH210 Safety data sheet available on request.

- ◆ **Other hazards**

3. Composition/information on ingredients

- ◆ **Chemical nature**

Synthetic hydrocarbon oil : 70~90%

special calcium soap : 5~20%

Additive : 3~5%

Hazardous components

Chemical name	CAS-No.	EC-No.	Concentration [%]
calcium special soap	1282612-32-1	--	20 - 30
Calcium di(acetate)	62-54-4	200-540-9	1-10
2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole	59656-20-1	261-844-5	>= 1 - < 2.5
1,3,4-Thiadiazolidine-2,5-dithione, reaction products with hydrogen peroxide and tert-dodecanethiol	--	939-692-2	1-2.5

For the full text of the R-phrases mentioned in this Section, see Section 16.

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. First-aid measures

- ◆ **Description of first aid measures**

If inhaled:

Remove person to fresh air. If signs/symptoms continue, get medical attention.

Keep patient warm and at rest.

If unconscious place in recovery position and seek medical advice.

Keep respiratory tract clear.

If breathing is irregular or stopped, administer artificial respiration.

In case of skin contact:

Take off all contaminated clothing immediately.

Wash off immediately with soap and plenty of water.

Get medical attention immediately if irritation develops and persists.

Wash clothing before reuse.

Thoroughly clean shoes before reuse.

In case of eye contact:

If eye irritation persists, consult a specialist.

Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes.

If swallowed:

If unconscious place in recovery position and seek medical advice.

Keep respiratory tract clear.

Never give anything by mouth to an unconscious person.

Get medical attention if symptoms occur.

Move the victim to fresh air.

Rinse mouth with water.

- ◆ **Most important symptoms and effects, both acute and delayed**

- ◆ **Indication of any immediate medical attention and special treatment needed**

5. Fire-fighting measures

- ◆ **Extinguishing media**

Suitable extinguishing media:

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media: none

- ◆ **Special hazards arising from the substance or mixture**

Specific hazards during firefighting:

Fire may cause evolution of:

Carbon oxides

Metal oxides

Nitrogen oxides (NO_x)

Sulphur oxides

- ◆ **Advice for firefighters**

Special protective equipment for fire-fighters:

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

In the case of respirable dust and/or fumes, use self-contained breathing apparatus.

Exposure to decomposition products may be a hazard to health.

Further information:

Standard procedure for chemical fires.

6. Accidental release measures

- ◆ **Personal precautions, protective equipment and emergency procedures**

Personal precautions:

Evacuate personnel to safe areas.

Use personal protective equipment.

Ensure adequate ventilation.

Do not breathe vapours or spray mist.

Refer to protective measures listed in sections 7 and 8.

- ◆ **Environmental precautions**

Environmental precautions:

Try to prevent the material from entering drains or water courses.

Prevent further leakage or spillage if safe to do so.

Local authorities should be advised if significant spillages cannot be contained.

- ◆ **Methods and material for containment and cleaning up**

Methods for cleaning up:

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

- ◆ **Reference to other sections**

7. Handling and storage

- ◆ **Precautions for safe handling**

Advice on safe handling:

Do not breathe vapours or spray mist.

Avoid contact with skin and eyes.

For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the application area.

Wash hands and face before breaks and immediately after handling the product.

Do not get in eyes or mouth or on skin.

Do not get on skin or clothing.

Do not ingest.

Do not repack.

Do not re-use empty containers.

These safety instructions also apply to empty packaging which may still contain product residues.

Keep container closed when not in use.

Avoid inhalation of vapour or mist.

- ◆ **Conditions for safe storage, including any incompatibilities**

- Requirements for storage areas and containers:**

- Store in original container.

- Keep container closed when not in use.

- Keep in a dry, cool and well-ventilated place.

- To maintain product quality, do not store in heat or direct sunlight.

- Containers which are opened must be carefully resealed and kept upright to prevent leakage.

- Store in accordance with the particular national regulations.

- Keep in properly labelled containers.

- ◆ **Specific end use(s)**

8. Exposure controls/personal protection

- ◆ **Control parameters**

- Contains no substances with occupational exposure limit values.**

- DNEL**

- 2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole:**

- End Use: Industrial use

- Exposure routes: Inhalation

- Potential health effects: Acute systemic effects

- Value: 1087 mg/m³

- End Use: Industrial use

- Exposure routes: Skin contact

- Potential health effects: Long-term systemic effects

- Value: 6.25 mg/kg

- End Use: Industrial use

- Exposure routes: Skin contact

- Potential health effects: Acute systemic effects

- Value: 3125 mg/kg

- ◆ **Exposure controls**

- Engineering measures**

- Maintain air concentrations below occupational exposure standards.

- It is recommended that all dust control equipment such as local exhaust ventilation and

material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment.

Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

none

Personal protection equipment

Respiratory protection:

In the case of vapour formation use a respirator with an approved filter.

Hand protection:

For prolonged or repeated contact use protective gloves.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.

The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case.

Eye protection:

Safety glasses with side-shields conforming to EN166.

Hygiene measures:

Wash face, hands and any exposed skin thoroughly after handling.

Protective measures:

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Environmental exposure controls

General advice:

Try to prevent the material from entering drains or water courses.

Prevent further leakage or spillage if safe to do so.

Local authorities should be advised if significant spillages cannot be contained.

9. Physical and chemical properties

♦ **Information on basic physical and chemical properties**

Physical state : paste.

Colour: beige.

Odour: characteristic

Odour Threshold: No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flammability (solid, gas): Combustible Solids

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Flash point : Not applicable

Auto-ignition temperature : No data available

Decomposition temperature : No data available

pH : Not applicable

Viscosity, dynamic : No data available

Viscosity, kinematic : Not applicable

Water solubility: insoluble

Solubility in other solvents: No data available

Partition coefficient n-octanol/water (Log Kow) : No data available

Vapour pressure : < 0.001 hPa (20 °C)

Density : 0.89 g/cm³(20 °C)

Relative density : 0.89 (20 °C) Reference substance: Water (The value is calculated)

Relative vapour density: No data available

Particle size : Not available

Particle size distribution : Not available

Particle shape : Not available

Particle aspect ratio : Not available

Particle aggregation state : Not available

Particle agglomeration state : Not available

Particle specific surface area : Not available

Particle dustiness : Not available

◆ **Other information**

Information with regard to physical hazard classes

No additional information available.

Other safety characteristics

No additional information available.

10. Stability and reactivity

◆ **Reactivity**

◆ **Chemical stability**

No decomposition if stored and applied as directed

◆ **Possibility of hazardous reactions**

Hazardous reactions: No dangerous reaction known under conditions of normal use.

◆ **Conditions to avoid**

Conditions to avoid: No conditions to be specially mentioned.

◆ **Incompatible materials**

Materials to avoid: No materials to be especially mentioned

◆ **Hazardous decomposition products**

11. Toxicological information

- ◆ **Information on toxicological effects**

Product

Acute inhalation toxicity: This information is not available.

Skin corrosion/irritation: This information is not available.

Serious eye damage/eye irritation: This information is not available.

Respiratory or skin sensitization: This information is not available.

Germ cell mutagenicity

Genotoxicity in vitro: No data available

Genotoxicity in vivo: No data available

Carcinogenicity: No data available

Reproductive toxicity: No data available

Teratogenicity: No data available

Repeated dose toxicity: This information is not available.

Aspiration toxicity: This information is not available.

Further information: Information given is based on data on the components and the toxicology of similar products.

Components:

Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:

Acute oral toxicity: LD50: > 5,000 mg/kg, rat, OECD Test Guideline 401

Acute dermal toxicity: LD50: > 2,000 mg/kg, rat, OECD Test Guideline 402

Skin corrosion/irritation:

rabbit, Result:No skin irritation, Classification: No skin irritation

Serious eye damage/eye irritation:

rabbit, Result: No eye irritation, Classification: No eye irritation

Respiratory or skin sensitization:

guinea pig, Result:Did not cause sensitisation on laboratory animals., OECD Test Guideline 406

2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole:

Acute oral toxicity: LD50: > 5,000 mg/kg, rat, OECD Test Guideline 401

Acute dermal toxicity: LD50: > 2,000 mg/kg, rat, OECD Test Guideline 402

Skin corrosion/irritation:

rabbit, Result: No skin irritation, Classification: No skin irritation, OECD Test Guideline 404

Serious eye damage/eye irritation:

rabbit, Result: No eye irritation, Classification: No eye irritation, OECD Test Guideline 405

Respiratory or skin sensitization: Buehler Test, guinea pig, Result: Did not cause sensitisation on laboratory animals., Classification: Did not cause sensitisation on laboratory animals., OECD Test Guideline 406

Germ cell mutagenicity

Assessment:

Animal testing did not show any mutagenic effects.

- ◆ **Information on other hazards**

- ◆ **Endocrine disrupting properties**

- ◆ **Assessment:** The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

- ◆ **Further information**

- ◆ **Remarks:** Information given is based on data on the components and the toxicology of similar products.

12. Ecological information

- ◆ **Toxicity**

- ◆ **Product**

- ◆ **Toxicity to fish:** No data available

- ◆ **Toxicity to daphnia and other aquatic invertebrates:** No data available

- ◆ **Toxicity to algae:** No data available

- ◆ **Toxicity to bacteria:** No data available

- ◆ **Components:**

- ◆ **Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:**

- ◆ **Toxicity to fish: LC50:** > 100 mg/l, 96 h, Danio rerio (zebra fish), OECD Test Guideline 203

- ◆ **Toxicity to daphnia and other aquatic invertebrates: EC50:** 51 mg/l, 48 h, Daphnia magna (Water flea), Immobilization, OECD 202 T1

- ◆ **Ecotoxicology Assessment**

- ◆ **Acute aquatic toxicity:** Harmful to aquatic life.

- ◆ **Chronic aquatic toxicity:** Harmful to aquatic life with long lasting effects.

- ◆ **2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole:**

- ◆ **Toxicity to fish: LC50:** > 1,000 mg/l, 96 h, Pimephales promelas (fathead minnow)

- ◆ **Toxicity to daphnia and other aquatic invertebrates:**

- ◆ **EC50:** 41 mg/l, 48 h, Daphnia magna (Water flea), OECD Test Guideline 202

- ◆ **Toxicity to algae: EC50:** > 100 mg/l, 72 h, Pseudokirchneriella subcapitata (green algae), Growth inhibition, OECD Test Guideline 201

- ◆ **Ecotoxicology Assessment**

- ◆ **Acute aquatic toxicity:** Harmful to aquatic life.

- ◆ **Chronic aquatic toxicity:** Harmful to aquatic life with long lasting effects.

- ◆ **Persistence and degradability**

- ◆ **Product**

- ◆ **Biodegradability:** No data available

- ◆ **Physico-chemical removability:** No data available

- ◆ **Components**

2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole:**Biodegradability:**

Primary biodegradation, Result: Not readily biodegradable., OECD Test Guideline 301C

◆ **Bioaccumulative potential****Product****Bioaccumulation:**

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)., This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Components**Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:****Bioaccumulation:**

Due to the distribution coefficient n-octanol/water, accumulation in organisms is possible.

2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole:**Bioaccumulation:**

Fish, Bioconcentration factor (BCF): 3.16

◆ **Mobility in soil****Product**

Mobility: No data available

Distribution among environmental compartments: No data available

◆ **Results of PBT and vPvB assessment****Product****Assessment:**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components**2,5-bis(tert-dodecyldithio)-1,3,4-thiadiazole:****Assessment:**

Non-classified PBT substance, Non-classified vPvB substance

◆ **Endocrine disrupting properties:**

Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation(EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

◆ **Other adverse effects:**

Additional ecological information: No information on ecology is available.

13. Disposal considerations◆ **Waste treatment methods**

Product:

The product should not be allowed to enter drains, water courses or the soil.

Waste codes should be assigned by the user based on the application for which the product was used.

Contaminated packaging:

Empty containers can be landfilled, when in accordance with the local regulations.

14. Transport information

- ◆ **UN number or ID number**
 - ADN Not regulated as a dangerous good
 - ADR Not regulated as a dangerous good
 - RID Not regulated as a dangerous good
 - IMDG Not regulated as a dangerous good
 - IATA Not regulated as a dangerous good
- ◆ **UN proper shipping name**
 - ADN Not regulated as a dangerous good
 - ADR Not regulated as a dangerous good
 - RID Not regulated as a dangerous good
 - IMDG Not regulated as a dangerous good
 - IATA Not regulated as a dangerous good
- ◆ **Transport hazard class(es)**
 - ADN Not regulated as a dangerous good
 - ADR Not regulated as a dangerous good
 - RID Not regulated as a dangerous good
 - IMDG Not regulated as a dangerous good
 - IATA Not regulated as a dangerous good
- ◆ **Packing group**
 - ADN Not regulated as a dangerous good
 - ADR Not regulated as a dangerous good
 - RID Not regulated as a dangerous good
 - IMDG Not regulated as a dangerous good
 - IATA(Cargo) Not regulated as a dangerous good
 - IATA(Passenger) Not regulated as a dangerous good
- ◆ **Environmental hazards**
 - ADN Not regulated as a dangerous good
 - ADR Not regulated as a dangerous good
 - RID Not regulated as a dangerous good
 - IMDG Not regulated as a dangerous good
- ◆ **Special precautions for user**
 - Not applicable
- ◆ **Maritime transport in bulk according to IMO instruments**

Remarks : Not applicable for product as supplied

15. Regulatory information

- ◆ **Safety, health and environmental regulations/legislation specific for the substance or mixture**
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59):
This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).
Major Accident Hazard Legislation:
96/82/EC Update: not applicable
- ◆ **Chemical Safety Assessment**
This information is not available.

16. Other information

Full text of R-phrases referred to under sections 2 and 3

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of H-Statements referred to under sections 2 and 3.

H412 Harmful to aquatic life with long lasting effects.

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