

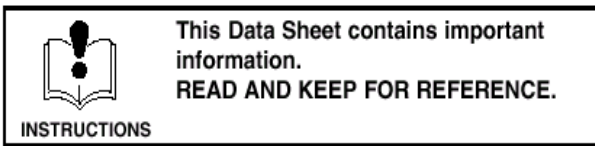


Safety Data Sheet

MSD029ENJP

Rev. A

Revision Date: 2023.5.1



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

Product identifier:

Product name: Graco Pump Armor

Product code (Part Numbers): 243103, 243014, 245133

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

Relevant identified uses of the product: Corrosion prevention, Rust prevention, Lubrication

Details of the supplier of the safety data sheet:

Graco K.K.

Address: 1-27-12 Hayabuchi, Tsuzuki-ku, Yokohama, Kanagawa 224-0025 Japan

Telephone number: +81-45-593-7300

FAX: +81-45-593-7301

URL: www.graco.com

Emergency Phone Number: For Chemical Emergency – Spill, Leak, Fire, Exposure, or Accident.

1-800-424-9300 (CHEMTREC, within USA/Canada)

1-703-741-5970 (CHEMTREC, Outside USD/Canada)



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Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Acute toxicity (Inhalation): Category 4

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

Germ cell mutagenicity: Category 2

Reproductive toxicity - effects on or via lactation: Additional category

Specific target organ toxicity - single exposure: Category 1

(blood system, central nervous system, kidneys)

Specific target organ toxicity - single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity - single exposure: Category 3 (Narcotic effects)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 3

Hazardous to the aquatic environment, long-term (chronic): Category 3

(Note) GHS classification without description: Not classified/Classification not possible

Label elements



Signal word: Danger

HAZARD STATEMENT

Harmful if inhaled

Causes skin irritation

Causes serious eye irritation

Suspected of causing genetic defects

May cause harm to breast-fed children

Causes damage to organs (blood system, central nervous system, kidneys)

May cause respiratory irritation

May cause drowsiness or dizziness

Harmful to aquatic life

Harmful to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Avoid contact during pregnancy and while nursing.

Avoid release to the environment.

Do not breathe mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Wear protective gloves.

Wear eye protection/face protection.

Use personal protective equipment as required.

Do not eat, drink or smoke when using this product.



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Response

Specific treatment is required.

IF exposed or concerned: Get medical advice/attention.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF exposed or concerned: Call a POISON CENTER/doctor/physician.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Storage

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Disposal

Dispose of contents/container in accordance with local/national regulation.

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name	CAS No.	Content (%)	Chemicals No, Japan
Ethylene glycol	107-21-1	40 - 60	2-230
Sodium nitrite	7632-00-0	0.1 - 1.0	1-483

Note: The figures shown above are not the specifications of the product.

The components not described in this component table are not listed in Japan GHS classification result.

Components contributing to the hazard

Component(s) come under Labeling, etc. article of Industrial Safety and Health Act, Japan

Ethylene glycol,

Sodium nitrite (Enforced on April 1, 2025)

Component(s) come under Deliver of Documents, etc. article of Industrial Safety and Health Act, Japan

Ethylene glycol,

Sodium nitrite (Enforced on April 1, 2025)

Section 4. First-aid measures

Descriptions of first-aid measures

IF INHALED



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Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing.

Wash contaminated clothing before reuse.

Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth.

Immediately call a POISON CENTER/doctor/physician.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

IF INHALED: Cough, Dizziness, Headache

IF SWALLOWED: Sore throat, Nausea/Vomiting, Abdominal pain, Drowsiness (Lethargy), Unconsciousness

(Symptoms when skin and/or eye contact)

IF ON SKIN: Redness

IF IN EYES: Redness, pain

Indication of any immediate medical attention and special treatment needed

Specific treatment is required

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use alcohol-resistant foam, dry powder, CO₂ to extinguish.

Unsuitable extinguishing media

Do not use direct water jet.

Specific hazards arising from the substance or mixture

Will form toxic carbon oxides, nitrogen oxides, sulfur oxides, phosphorus oxides, hydrocarbons, aldehydes upon combustion.

Vapors may form explosive mixtures with air.

Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Cool container with water spray.

Apply water from a safe distance to cool and protect surrounding area.

Prevent extinguishing water from entering sewers.



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Move containers from fire area if this can be done without risk.

Extinguish from the windward to the extent possible.

Even after extinguishing the fire, cool containers sufficiently using a large amount of water.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame-retardant clothing.

Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

Wear proper protective equipment.

Eliminate all sources of ignition and ventilate the area.

Stop leak if safe to do so.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Do not wash away into sewers or waterway.

If flown out into rivers, contact competent authorities.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

For large spill, dike for later disposal.

Fill the disposal into labelled, closable containers.

Use clean non-sparking tools to collect absorbed material.

Preventive measures for secondary accident

Prepare extinguishers before catching fire.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Avoid breathing mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures



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Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Wear protective gloves.
Wear eye protection/face protection.
Use personal protective equipment as required.
Do not weld, heat, drill and cut container.
Do not reuse container for other purposes.

Any incompatibilities

Acids, Strong oxidizing agents should not be mixed with the chemicals.

Advice on general occupational hygiene

Do not get in eyes, on skin, or on clothing.
Avoid contact during pregnancy and while nursing.
Wash contaminated parts thoroughly after handling.
Do not eat, drink or smoke when using this product.
Take off contaminated clothing and wash it before reuse.
Wash hands thoroughly after handling.

Storage

Conditions for safe storage

Store in a well-ventilated place. Keep container tightly closed.
Keep cool. Protect from sunlight.
Store locked up.

(Incompatible storage condition)

Keep away from food, drink and animal feedstuffs.
Avoid heat and sources of ignition (flames, sparks, etc.).

Container and packaging materials for safe handling data is not available.

Section 8. Exposure controls/personal protection

Control parameters

Control value in MHLW is not available.

Adopted value

Adopted value in JSOH is not available.
(Ethylene glycol)
ACGIH(2017) TWA: 25ppm(V);
STEL: 50ppm (V), 10mg/m³(l,H) (URT irr).

Exposure controls

Appropriate engineering controls

Exhaust/ventilator should be available.
Eye wash station should be available.
Washing facilities should be available.

Individual protection measures

Respiratory protection



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In case of inadequate ventilation wear respiratory protection.

Hand protection

Wear protective gloves. Recommended material(s): nitrile, impermeable or chemical resistant rubber

Eye protection

Wear safety glasses with side-shields or chemical safety goggle.

Skin and body protection

Wear impermeable protective clothing.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Clear, Blue

Odor: Mild sweet odor

Odor threshold data is not available.

Melting point/Freezing point data is not available.

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Flammability (gases, liquids and solids): Combustible

Lower and upper explosion limit/flammability limit data is not available.

Flash point: (Cleveland open cup method) 118°C

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH: ca. 10 - 11

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible

Solubility in solvent: Insoluble in most petroleum solvents

n-Octanol/water partition coefficient data is not available.

Vapor pressure data is not available.

Density and/or relative density: 1.08g/cm³ (15.6°C)

Relative vapor density (Air=1): >1

Particle characteristics: Not applicable

Section 10. Stability and Reactivity

Reactivity

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

Possibility of hazardous reactions data is not available.



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Conditions to avoid

Avoid direct sunlight, heat and sources of ignition (flames, sparks, etc.).

Incompatible materials

Acids, Strong oxidizing agents

Hazardous decomposition products

The following substances are produced by pyrolysis.

Carbon oxides, Nitrogen oxides, Sulfur oxides, Phosphorus oxides, Hydrocarbons, Aldehydes

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Ethylene glycol)

rat LD50=6,140mg/kg (PATTY 6th, 2012)

(Sodium nitrite)

rat LD50=77-150mg/kg (SIDS, 2005)

Acute toxicity (Dermal)

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Acute toxicity (Inhalation)

[Product]

Category 4, Harmful if inhaled.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Ethylene glycol)

mist: rat LC50=2.7mg/L/4hr (PATTY 6th, 2012)

Irritant properties

Skin corrosion/irritation

[Product]

Category 2, Causes skin irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Ethylene glycol)

human irritation (SIDS, 2009)

Serious eye damage/irritation

[Product]



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Category 2, Causes serious eye irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Ethylene glycol)

rabbit mild conjunctiva irritation (CICAD 45, 2002)

(Sodium nitrite)

rabbit moderate irritation (SIDS, 2005)

Sensitization

Respiratory sensitization

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Skin sensitization

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Germ cell mutagenicity

[Product]

Category 2, Suspected of causing genetic defects.

[Data for components of the product]

[GHS Cat. Japan, base data]

(Sodium nitrite)

cat. 2 (IARC 94, 2010)

Carcinogenicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

[ACGIH]

(Ethylene glycol)

A4(2017) : Not Classifiable as a Human Carcinogen.

Reproductive toxicity

[Product]

Additional category, May cause harm to breast-fed children

[Data for components of the product]

[GHS Cat. Japan, base data]

(Sodium nitrite)

cat. 2 (SIDS, 2005)

(Sodium nitrite)

cat. add (SIDS, 2005)

Specific target organ toxicity (STOT)

STOT-single exposure



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[Product]

- Category 1, Causes damage to organs
- Category 3, May cause respiratory irritation
- Category 3, May cause drowsiness or dizziness

[Data for components of the product]

[cat.1]

- [GHS Cat. Japan, base data]
- (Ethylene glycol)
- blood system, central nervous system, kidneys (NITE Initial Risk Assessment Report, 2007; SIDS, 2009)
- (Sodium nitrite)
- blood (SIDS, 2005)

[cat.3 (respiratory tract irritation)]

- [GHS Cat. Japan, base data]
- (Ethylene glycol)
- respiratory tract irritation (NITE Initial Risk Assessment Report, 2007; ACGIH 7th, 2001)

[cat.3 (narcotic effects)]

- [GHS Cat. Japan, base data]
- (Ethylene glycol)
- narcotic effect (NITE Initial Risk Assessment Report, 2007; ACGIH 7th, 2001)

STOT-repeated exposure

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

[cat.2]

- [GHS Cat. Japan, base data]
- (Sodium nitrite)
- blood (NTP TR 495, 2001)

Aspiration hazard

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

Section 12. Ecological Information

Toxicity

Aquatic toxicity

[Product]

- Category 3, Harmful to aquatic life
- Category 3, Harmful to aquatic life with long lasting effects.

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)



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[GHS Cat. Japan, base data]

(Ethylene glycol)

Fish (*Oryzias latipes*) LC50 >100mg/L/96hr (MOE Japan, 2001)

(Sodium nitrite)

Fish (rainbow trout) LC50=0.54mg/L/96hr (SIDS, 2006)

Hazardous to the aquatic environment, long-term (chronic)

[GHS Cat. Japan, base data]

(Ethylene glycol)

Crustacea (*Ceriodaphnia dubia*) MATC=4.2mg/L/7days (MOE Japan, 2004).

Water solubility

(Ethylene glycol)

100 g/100 ml (PHYSPROP_DB, 2005)

(Sodium nitrite)

82 g/100 ml (20°C) (ICSC, 2000)

Persistence and degradability

[Data for components of the product]

(Ethylene glycol)

Rapidly degradable (BOD_Degradation: 90%/14days (METI existing chemical safety inspections, 1988))

Bio accumulative potential

[Data for components of the product]

(Ethylene glycol)

log Pow=-1.93 (ICSC, 1999)

(Sodium nitrite)

log Pow=-3.7 (ICSC, 2000)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment.

Dispose of contents/container in accordance with local/national regulation.

Dispose to an authorized waste collection point.

This material must be disposed of as hazardous waste.

Do not dump into sewers, on the ground or into any body of water.

Contaminated package

Dispose of container after using the contents completely.



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Section 14. Transport Information

UN No., UN CLASS

UN Number or ID Number: Not applicable
UN Proper Shipping Name: Not applicable
Class or division (Transport hazard class): Not applicable
Packing group: Not applicable

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number: Not applicable
UN Proper Shipping Name: Not applicable
Class or division (Transport hazard class): Not applicable
Packing group: Not applicable IATA (Dangerous Goods Regulations)

IATA (Dangerous Goods Regulations)

UN Number or ID Number: Not applicable
UN Proper Shipping Name: Not applicable
Class or division (Transport hazard class): Not applicable
Packing group: Not applicable

Environmental hazards

Marine pollutants (yes/no): no

Special precautions for user

Special precaution for user is not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Noxious Liquid Substances; Cat. Y
Sodium nitrite
Noxious Liquid Substances; Cat. Z
Ethylene glycol

Rules and regulations on domestic transport

Not applicable to Ship Safety Act
Not applicable to Civil Aeronautics Act

Section 15. Regulatory Information

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

Poisonous and Deleterious Substances Control Law, Japan

The product is not applicable to Toxic/harmful substances control law, Japan

Industrial Safety and Health Act, Japan

The product is not applicable to Specified Chemical Ordinance, Japan

The product is not applicable to Organic Solvent Ordinance, Japan

Chemical Substances requiring Labeling and Deliver of Documents, etc.

Labeling, etc.

Ethylene glycol (Attached table 9-75);

Sodium nitrite (Attached table 9, Enforced on April 1, 2025)



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Report required substances

Ethylene glycol (Attached table 9-75);

Sodium nitrite (Attached table 9, Enforced on April 1, 2025).

PRTR law, Japan

The product is not applicable to Pollutant Release and Transfer Register (PRTR) law, Japan

Fire Service Act, Japan

Hazardous materials

Petroleum Gr.3, water soluble, (Class III) (Designated quantity 4,000L)

Chemical Substances Control Law, Japan

Priority Assessment Chemical Substances (PACs)

Ethylene glycol (Registration No. 1005 Human Health)

Water Pollution Control Law, Japan

Hazardous substance(s)

Sodium nitrite

Article 2-26 of Cabinet order:

100mg/L (Total amount of ammonium-nitrogen x 0.4 and nitrite and nitrate nitrogen)

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

107-21-1; 7632-00-0

Superfund Amendments and Reauthorizations Act (SARA), Title III

SARA 313 (TRI)

Ethylene glycol; Sodium nitrite

California proposition 65

WARNING: This product can expose you to chemical(s), which is(are) known to the State of California to cause cancer, and/or chemical(s), which is (are) known to the State of California to cause birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov.

Reproductive Toxicity

Ethylene glycol (Developmental Toxicity)

Chemical safety assessment

No chemical safety assessment has been carried out for this product.

Section 16. Other information

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 22nd edit., 2021 UN

IMDG Code, 2020 Edition (Incorporating Amendment 40-20)

IATA Dangerous Goods Regulations (64th Edition) 2023

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2022 TLVs and BEIs. (ACGIH)

JIS Z 7252: 2019

JIS Z 7253: 2019

2022 Recommendation on TLVs (JSOH)



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Notification No. 0111-1 (January 11, 2022), Chemical Hazards Control Division, Industrial Safety and Health Department, Labor Standards Bureau, Ministry of Health, Labor and Welfare

Supplier's data/information

GESTIS-Stoffdatenbank

Pub Chem (OPEN CHEMISTRY DATABASE)

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The GHS classification data given here is based on current Japan official data (NITE published in 2021).

Note: Sections 2 – 16 are provided by the material provider's SDS.

Revision History: JIS-compliant SDS (Japanese) Rev.A, GHS-compliant SDS (English) Rev.F

Prepared By	Graco K.K.
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This Material Safety Data Sheet and the information it contains is offered to you in good faith as accurate. We have reviewed any information contained in this data sheet which we have received from sources outside our company. We believe that information to be correct, but cannot guarantee its accuracy or completeness. Health and safety precautions in this Data Sheet may not be adequate for all individuals and/or situations. It is the users' obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. No statement made in this data sheet shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents. No warranty is made, either express or implied.

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Graco reserves the right to make changes at any time without notice.

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