

SAFETY DATA SHEET

Supersedes date: 2015-06-01

Revision: 1

K-Seal

According to WHMIS 2015, in compliance with the Hazardous Product Act (HPA, as amended) and the requirements of the Hazardous Product Regulations (HPR)

1. Identification

Product identifier

Product name K-Seal Product number ST9501

Recommended use of the chemical and restrictions on use

Restriction on use Additive for engine cooling systems.

Uses advised against No specific uses advised against are identified.

Details of the supplier of the safety data sheet

Manufactured For:

FMSI EDELMANN FITTINGS 1070 HERITAGE ROAD BURLINGTON, ON L7L 4X9



Emergency telephone number

Emergency telephone 609 261 4242 (Monday - Friday 08:30 -16:30h)

2. Hazard identification

Classification of the substance or mixture

Physical hazards Not Classified

Health hazards Eye Irrit. 2A - H319 Repr. 1B - H360FD

Environmental hazards Aquatic Acute 3 - H402 Aquatic Chronic 3 - H412

Label elements

Hazard pictograms





Signal word Danger

Hazard statements H319 Causes serious eye irritation.

H360FD May damage fertility. May damage the unborn child.

H412 Harmful to aquatic life with long lasting effects.





Precautionary statements P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P264 Wash contaminated skin thoroughly after handling.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove

contact lenses, if present and easy to do. Continue rinsing.

P308+P313 IF exposed or concerned: Get medical advice/ attention. P337+P313 If eye irritation persists: Get medical advice/ attention.

P405 Store locked up.

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

Contains Disodium tetraborate decahydrate

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

bis(D-Gluconato-O1,O2)zinc 1 - 5%

CAS number: 4468-02-4

M factor (acute) = 1 M factor (chronic) = 1

Classification

Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

Disodium tetraborate decahydrate

1 - 5%

CAS number: 1330-43-4

Classification

Eye Irrit. 2 - H319 Repr. 1B - H360FD

4-Nonylphenol, branched, ethoxylated

1 - 5%

CAS number: 127087-87-0

Classification

Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Aquatic Chronic 3 - H412

Copper (powder) 0.1 - 1%

CAS number: 7440-50-8 M factor (acute) = 1

Classification

Aquatic Acute 1 - H400 Aquatic Chronic 3 - H412



Refractories, fibers, aluminosilicate <0.1%

CAS number: 142844-00-6

Classification Carc. 1B - H350i

The full text for all hazard statements is displayed in Section 16.

4. First-aid measures

Description of first aid measures

General information Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

Inhalation Remove affected person from source of contamination. Move affected person to fresh air and

keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained

personnel may assist affected person by administering oxygen.

Ingestion Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Stop if

the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so

that vomit does not enter the lungs.

Skin contact It is important to remove the substance from the skin immediately. Remove contamination

with soap and water or recognised skin cleansing agent. Get medical attention if symptoms are severe or persist after washing. In the event of any sensitization symptoms developing,

ensure further exposure is avoided.

Eye contact Remove any contact lenses and open eyelids wide apart. Rinse immediately with plenty of

water. Continue to rinse for at least 10 minutes.

Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue. Wash

contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth

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resuscitation.

Most important symptoms and effects, both acute and delayed

General information See Section 11 for additional information on health hazards. The severity of the symptoms

described will vary dependent on the concentration and the length of exposure.

Inhalation Spray/mists may cause respiratory tract irritation. Prolonged inhalation of high concentrations

may damage respiratory system.

Ingestion Gastrointestinal symptoms, including upset stomach.

Skin contact The product contains a small amount of sensitizing substance. May cause skin sensitization

or allergic reactions in sensitive individuals.

Eye contact Irritating to eyes.

Indication of any immediate medical attention and special treatment needed

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry

powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.



Unsuitable extinguishing

media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the hazardous product

Specific hazardsContainers can burst violently or explode when heated, due to excessive pressure build-up.

Hazardous combustion

products

Thermal decomposition or combustion products may include the following substances:

Harmful gases or vapours. Carbon dioxide (CO2). Carbon monoxide (CO).

Advice for firefighters

Protective actions during firefighting

Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters

Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing that provides a basic level of protection during chemical incidents is defined by the Canada Occupational Health and Safety Regulations, by provincial guidelines on occupational health and safety or by NFPA standards if applicable.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Do not touch or walk into spilled material. Keep unnecessary and unprotected personnel away

from the spillage. Avoid contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this

safety data sheet. Wash thoroughly after dealing with a spillage.

Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground.

Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Do not empty into

drains. Absorb spillage with non-combustible, absorbent material. The contaminated absorbent may pose the same hazard as the spilled material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water. For waste disposal, see Section 13. Wash thoroughly after dealing

with a spillage.

Reference to other sections

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health

hazards. See Section 12 for additional information on ecological hazards. For waste disposal,

see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions Keep out of the reach of children. Keep away from food, drink and animal feeding stuffs. Read

and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Do not handle broken packages without protective equipment. Handle all packages and containers carefully to minimize spills. Keep container tightly sealed when not in use. Avoid discharge to the aquatic environment. Do not reuse empty containers.



Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change washed by the first leading to the standard of the same and the same a

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work clothing daily before leaving workplace.

Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep

containers upright. Protect containers from damage. Utilize retaining walls to prevent soil and

water pollution in the event of spillage.

Storage class Miscellaneous hazardous material storage.

Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.

8. Exposure controls/Personal protection

Control parameters

Occupational exposure limits

Disodium tetraborate decahydrate

Long-term exposure limit (8-hour TWA): ACGIH 2 mg/m³ inhalable fraction Short-term exposure limit (15-minute): ACGIH 6 mg/m³ inhalable fraction A4

Copper (powder)

Long-term exposure limit (8-hour TWA): Alberta, British Columbia, Manitoba, Newfoundland & Labrador, Northwest Territories, Nova Scotia, Nunavut, Ontario, Prince Edward Island, Quebec, Saskatchewan, Yukon 0.2 mg/m³ fume Long-term exposure limit (8-hour TWA): Alberta, British Columbia, New Brunswick, Northwest Territories, Nunavut, Ontario, Quebec, Saskatchewan, Yukon 1 mg/m³ dusts and mists

Short-term exposure limit (15-minute): Northwest Territories, Nunavut, Saskatchewan 0.6 mg/m³ fume

Short-term exposure limit (15-minute): Northwest Territories, Nunavut, Saskatchewan 3 mg/m³ dusts and mists

Short-term exposure limit (15-minute): Yukon 0.2 mg/m³ fume

Short-term exposure limit (15-minute): Yukon 2 mg/m³ dusts and mists

as Cu

Refractories, fibers, aluminosilicate

Long-term exposure limit (8-hour TWA): Alberta, Northwest Territories, Nunavut, Saskatchewan 0.2 f/cc respirable fibers Long-term exposure limit (8-hour TWA): British Columbia, Manitoba, Newfoundland & Labrador, Nova Scotia, Prince Edward Island 0.2 f/cc respirable fibers: length > 5 μ m, aspect ratio >=3.1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination

Long-term exposure limit (8-hour TWA): Ontario 0.5 f/cc respirable fibers: length > 5 μ m, aspect ratio >=3.1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination

Long-term exposure limit (8-hour TWA): Quebec 1 f/cc respirable fibers

ACGIH = American Conference of Governmental Industrial Hygienists.

A4 = Not Classifiable as a Human Carcinogen.

Exposure controls

Protective equipment







Appropriate engineering controls

Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimize worker exposure. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimize exposure.



Eye/face protection Eyewear complying with an approved standard should be worn if a risk assessment indicates

eye contact is possible. Wear chemical splash goggles.

Hand protection Wear protective gloves made of the following material: Rubber (natural, latex). Polyvinyl

chloride (PVC). Nitrile rubber. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as

soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body

protection

Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene measures Provide eyewash station and safety shower. Contaminated work clothing should not be

allowed out of the workplace. Wash contaminated clothing before reuse. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before

eating, smoking and using the toilet. When using do not eat, drink or smoke.

Respiratory protection If ventilation is inadequate, suitable respiratory protection must be worn.

Environmental exposure

controls

Keep container tightly sealed when not in use. Avoid release to the environment.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance Liquid.

Colour Light brown.

Odour Mild.

Odour threshold Not available.

pH pH (concentrated solution): 5.4-6.4

Melting point Not available.

Initial boiling point and range Not available.

Flash point Not available.

Evaporation rate Not available.

Upper/lower flammability or

explosive limits

Not available.

Vapour pressure Not available.

Vapour density Not available.

Relative density 1.031-1.055 @ 21.1°C/70°F

Bulk density 8.6-8.8 lb/Ga

Solubility(ies) Not known.

Partition coefficient Not available.

Auto-ignition temperature Not available.

Decomposition Temperature Not available.

Viscosity Not applicable.

Explosive properties Not considered to be explosive.

Oxidising properties Does not meet the criteria for classification as oxidizing.



Volatility ~50%

10. Stability and reactivity

Reactivity See the other subsections of this section for further details.

Stability Stable at normal ambient temperatures and when used as recommended. Stable under the

prescribed storage conditions.

Possibility of hazardous

reactions

No potentially hazardous reactions known.

Conditions to avoid Avoid excessive heat for prolonged periods of time.

Materials to avoid Strong oxidizing agents.

Hazardous decomposition

products

Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral

Notes (oral LD50) Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC50) Based on available data the classification criteria are not met.

ATE inhalation (vapours mg/l) 880.0

Skin corrosion/irritation

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

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitization

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization

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

Skin sensitization The product contains a small amount of sensitizing substance. May cause skin sensitization

or allergic reactions in sensitive individuals.

Germ cell mutagenicity

Genotoxicity - in vitroBased on available data the classification criteria are not met.

Carcinogenicity

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

IARC carcinogenicity

Contains a substance which may be potentially carcinogenic. IARC Group 2B Possibly

carcinogenic to humans.

Reproductive toxicity

SummaryContains a substance/a group of substances which may damage fertility and the unborn child.



Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

General information Avoid contact during pregnancy/while nursing. May damage fertility. The severity of the

symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation Spray/mists may cause respiratory tract irritation. Prolonged inhalation of high concentrations

may damage respiratory system.

Ingestion Gastrointestinal symptoms, including upset stomach.

Skin contact The product contains a small amount of sensitizing substance. May cause sensitization by

skin contact.

Eye contact Irritating to eyes.

Route of exposure Ingestion Inhalation Skin and/or eye contact

Target organs No specific target organs known.

Medical considerations Skin disorders and allergies.

Toxicological information on ingredients

bis(D-Gluconato-O1,O2)zinc

Toxicological effects Not regarded as a health hazard under current legislation.

Disodium tetraborate decahydrate

Acute toxicity - oral

Notes (oral LD₅₀) REACH dossier information.

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ >2000 mg/kg, Dermal, Rabbit REACH dossier information.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ >2.04 mg/l, Inhalation, Rat REACH dossier information.

Skin corrosion/irritation

Animal data Dose: 0.5g, 24 hours, Rabbit Erythema/eschar score: No erythema (0). Edema

score: No edema (0). REACH dossier information.

Serious eye damage/irritation

Serious eye Dose: 0.08 mL, 14 days, Rabbit REACH dossier information.

damage/irritation
Skin sensitization

Skin sensitization Buehler test - Guinea pig: Not sensitising. REACH dossier information.

Germ cell mutagenicity

Genotoxicity - in vitroDNA damage and/or repair: Negative. REACH dossier information.



Genotoxicity - in vivo Chromosome aberration: Negative. REACH dossier information.

Carcinogenicity

Carcinogenicity NOAEL >5000 ppm, Oral, Mouse REACH dossier information.

Reproductive toxicity

Reproductive toxicity -

fertility

Three-generation study - NOAEL 100 mg/kg/day, Oral, Rat F1 REACH dossier

information. May damage fertility.

Reproductive toxicity -

development

Developmental toxicity: - NOAEL: 55 mg/kg/day, Oral, Rat REACH dossier

information. May damage the unborn child.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL 100 mg/kg/day, Oral, Rat REACH dossier information.

4-Nonylphenol, branched, ethoxylated

Skin corrosion/irritation

Animal data Irritating.

Serious eye damage/irritation

Serious eye

damage/irritation

Causes serious eye damage.

Copper (powder)

Toxicological effects Not regarded as a health hazard under current legislation.

Acute toxicity - oral

Notes (oral LD₅o) LD₅o >2500 mg/kg, Oral, Rat REACH dossier information.

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ >2000 mg/kg, Dermal, Rat REACH dossier information.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LD₅₀ >5.11 mg/l, Inhalation, Rat REACH dossier information.

Skin corrosion/irritation

Animal data Dose: 0.5 g, 4 hours, Rabbit Erythema/eschar score: No erythema (0). Edema

score: No edema (0). REACH dossier information.

Skin sensitization

Skin sensitization Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising. REACH dossier

information.

Germ cell mutagenicity

Genotoxicity - in vitroGene mutation: Negative. REACH dossier information.

Genotoxicity - in vivo DNA damage and/or repair: Negative. REACH dossier information.

Reproductive toxicity

Reproductive toxicity -

fertility

Two-generation study - NOAEL 1000 ppm, Oral, Rat P REACH dossier information.

Aspiration hazard

Aspiration hazard Not relevant.



12. Ecological information

Toxicity Aquatic Chronic 3 - H412 Harmful to aquatic life with long lasting effects.

Ecological information on ingredients

bis(D-Gluconato-O1,O2)zinc

Toxicity Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410 Very toxic to aquatic life with long

lasting effects.

Acute aquatic toxicity

 LC_{50}/EC_{50} 0.1 < $L(E)C50 \le 1$

M factor (acute) 1

Chronic aquatic toxicity

M factor (chronic) 1

Disodium tetraborate decahydrate

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 74 mg/l, Limanda limanda

Acute toxicity - aquatic

invertebrates

LC₅o, 96 hours: 147 mg/l, Ligumia Recta

Acute toxicity - aquatic

plants

EC₅o, 72 hours: 40.2 mg/l, Selenastrum capricornutum

4-Nonylphenol, branched, ethoxylated

Toxicity Aquatic Chronic 3 - H412 Harmful to aquatic life with long lasting effects.

Copper (powder)

Toxicity Aquatic Acute 1 - H400 Aquatic Chronic 3 - H412 Very toxic to aquatic life with long

lasting effects.

Acute aquatic toxicity

 LC_{50}/EC_{50} 0.1 < L(E)C50 ≤ 1

M factor (acute)

Acute toxicity - fish LC₅₀, 96 hours: 0.2 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic

invertebrates

EC₅₀, 48 hours: 0.529 mg/l, Daphnia magna

Chronic aquatic toxicity

Short term toxicity - NOEC, 45 days: 11.4 µg/l, Oncorhynchus mykiss (Rainbow trout)

embryo and sac fry stages

Persistence and degradability

Persistence and degradability The degradability of the product is not known.

Ecological information on ingredients

bis(D-Gluconato-O1,O2)zinc



Persistence and degradability

The degradability of the product is not known.

Disodium tetraborate decahydrate

Persistence and degradability

The degradability of the product is not known.

4-Nonylphenol, branched, ethoxylated

Persistence and degradability

The degradability of the product is not known.

Copper (powder)

Persistence and degradability

The product contains inorganic substances which are not biodegradable.

Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not available.

Ecological information on ingredients

bis(D-Gluconato-O1,O2)zinc

Bioaccumulative potential No data available on bioaccumulation.

Disodium tetraborate decahydrate

Bioaccumulative potential BCF: 0.7-1.4, Crassostrea gigas

Partition coefficient log Pow: -1.53

4-Nonylphenol, branched, ethoxylated

Bioaccumulative potential No data available on bioaccumulation.

Copper (powder)

Bioaccumulative potential Not relevant.

Mobility in soil

Mobility The product is water-soluble and may spread in water systems.

Ecological information on ingredients

bis(D-Gluconato-O1,O2)zinc

Mobility No data available.

Disodium tetraborate decahydrate

Mobility Soluble in water.

Surface tension 71 mN/m @ 23°C



4-Nonylphenol, branched, ethoxylated

Mobility No data available.

Copper (powder)

Mobility The product is insoluble in water.

Other adverse effects

Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

General information The generation of waste should be minimized or avoided wherever possible. Reuse or recycle

products wherever possible. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners

may retain some product residues and hence be potentially hazardous.

Disposal methods Dispose of surplus products and those that cannot be recycled via a licensed waste disposal

contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents.

Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information

General The product is not covered by international regulations on the transport of dangerous goods

(IMDG, IATA, TDG).

UN number

UN No. (International) Not applicable.

UN No. (DOT) Not applicable.

UN proper shipping name

Proper shipping name

(International)

Not applicable.

Proper shipping name (DOT) Not applicable.

Transport hazard class(es)

Transport Labels

(International)

No transport warning sign required.

DOT transport label

Packing group

Packing group (International) Not applicable.

DOT packing group Not applicable.

Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

Special precautions for user



Not applicable.

DOT reportable quantity Not applicable. **DOT TIH Zone** Not applicable.

Transport in bulk according to Not applicable. Annex II of MARPOL 73/78

and the IBC Code

15. Regulatory information

Regulatory Status This product has been classified in accordance with the hazard criteria of the Hazardous

Products Regulations and the MSDS contains all the information required by the Hazardous

Products Regulations.

Regulatory References Hazardous Products Regulations - SOR/2015-17. Transportation of Dangerous Goods

Regulations -SOR/2015-100.

Inventories

Canada - DSL/NDSL

Some of the ingredients are listed or exempt.

16. Other information

Training advice Read and follow manufacturer's recommendations. Only trained personnel should use this

material.

Revision comments Document reviewed.

Revision date 2023-11-28

Revision 1

Supersedes date 2015-06-01

SDS number 1971

Hazard statements in full H315 Causes skin irritation.

> H318 Causes serious eve damage. H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H350i May cause cancer by inhalation.

H360FD May damage fertility. May damage the unborn child.

H400 Very toxic to aquatic life. H402 Harmful to aquatic life.

H410 Very toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

End of Safety Data Sheet



Product name: K-SEAL

Product #: ST9501 Version #: 01 Revision date: 28-NOV-2023