

SAFETY DATA SHEETS

Microarmor Antimicrobial Co., Ltd.

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition.

Version : 1.1

Creation Date : Oct 30, 2018

Revision Date : Nov 15, 2018

1 Identification

1.1 GHS Product identifier

Product name : Ag-loaded antimicrobial agents

1.2 Other means of identification

Product number : Micro-KF107

Other names : Micro-KF

1.3 Recommended use of the chemical and restrictions on use

Identified uses : 0.6% - 1%, according to the manufacturer's instructions.

Recommended concentration : Antibacterial Addition of Plastics and Coatings.

1.4 Supplier's details

Company : Microarmor Antimicrobial Co., Ltd.

Address : Paoli Industrial Park, Yuanzhou town, Huizhou City, China

Telephone : +86-0752-6396991

Fax : +86-0752-6396891

E-mail : jinming.lab@mkfmkj.com

www.mkfmkj.com

1.5 Emergency phone number

Association/organization : R&D Center-Technical Services Department

Emergency phone number : +86-0752-6396991

Other emergency phone number : No

2 Hazard identification

2.1 Classification of the substance or mixture

Skin sensitization, Category 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H317 May cause an allergic skin reaction

Precautionary statement(s)

Prevention

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P272 Contaminated work clothing should not be allowed out of the workplace.

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

P302+P352 IF ON SKIN: Wash with plenty of water/...

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P321 Specific treatment (see ... on this label).

P362+P364 Take off contaminated clothing and wash it before reuse.

Storage

none

Disposal

P501 Processing contents/containers in accordance with local regulations.

2.3 Other dangerous properties

Non

3 Composition/information on ingredients

3.1 Substances

Mixture

CAS No.	EC number	Chemical name	Concentration
13772-29-7	266-046-0	hydrogen phosphate,zirconium(4+)	98%
7440-22-4	231-131-3	Silver	2%

4 First-aid measures

4.1 Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms/effects, acute and delayed

no data available

4.3 Indication of immediate medical attention and special treatment needed, if necessary

no data available

5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical

no data available.

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7 Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2. Consider storage in levee areas - ensure that storage areas are isolated from public water sources (including rainwater, groundwater, lakes and streams).

7.2 Conditions for safe storage, including any incompatibilities

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

8 Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

no data available

Biological limit values

no data available

8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

8.4 Individual protective equipment



9 Physical and chemical properties

9.1 Basic Physical and Chemical Properties

Appearance	Odorless and odorless white powder		
Physical state	Powder	Density and/or relative density (water=1)	3.3g/mL at 25 °C (lit.)
Odour	Odourless	Partition coefficient n-octanol/water (log value)	not applicable
Odor threshold	not applicable	Auto-ignition temperature (°C)	not applicable
PH	not applicable	Decomposition temperature (°C)	1600
Melting point/ freezing point (°C)	961	Kinematic viscosity (cSt)	not applicable
Boiling point or initial boiling point and boiling range (°C)	158°C at 760mmHg	Molecular weight (g/mol)	not applicable
Flash point (°C)	12	Taste	not applicable
Evaporation rate	not applicable	Explosive properties	not applicable
Flammability	not applicable	Oxidation properties	not applicable

Upper explosion limit (%)	not applicable	Surface tension (dyn/cm or nmN/m)	not applicable
Lower explosion limit (%)	not applicable	Volatile constituents (%体积)	not applicable
Vapour pressure (kPa)	not applicable	Gas group	not applicable
Solubility In water (g/L)	not applicable	PH value of solution (1%)	7-8
Relative vapour density (air=1)	not applicable	VOC g/L	not applicable

10 Stability and reactivity

10.1 Reactivity

no data available.

10.2 Chemical stability

Stable under recommended storage conditions.

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 data available.

11 Toxicological information

Acute toxicity

Oral: no data available

Inhalation: no data available

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

12 Ecological information

12.1 Ecotoxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

It is forbidden to discharge into sewers or water bodies.

12.2 Persistence and degradability

Component	Persistence: water/soil	Persistence: Air
hydrogen phosphate,zirconium(4+)	no data available	no data available
Silver	no data available	no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Other adverse effects

no data available

13 Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14 Transport information

14.1 UN Number

ADR/RID: Not dangerous goods. IMDG: Not dangerous goods. IATA: Not dangerous goods.

14.2 UN Proper Shipping Name

ADR/RID: unknown

IMDG: unknown

IATA: unknown

14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods. IMDG: Not dangerous goods. IATA: Not dangerous goods.

14.4 Packing group, if applicable

ADR/RID: Not dangerous goods. IMDG: Not dangerous goods. IATA: Not dangerous goods.

14.5 Environmental hazards

ADR/RID: no IMDG: no IATA: no

14.6 Special precautions for user

no data available

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

no data available

15 Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	CAS number	EC number
hydrogen phosphate,zirconium(4+)	13772-29-7	none
European Inventory of Existing Commercial Chemical Substances (EINECS)		Listed
EC Inventory		Listed
United States Toxic Substances Control Act (TSCA) Inventory		Listed

China Catalog of Hazardous chemicals 2015		Not Listed
New Zealand Inventory of Chemicals (NZIoC)		Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS)		Not Listed
Vietnam National Chemical Inventory		Not Listed
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)		Listed
Chemical name	CAS number	EC number
silver	7440-22-4	none
European Inventory of Existing Commercial Chemical Substances (EINECS)		Listed
EC Inventory		Listed
United States Toxic Substances Control Act (TSCA) Inventory		Listed
China Catalog of Hazardous chemicals 2015		Not Listed
New Zealand Inventory of Chemicals (NZIoC)		Listed
Philippines Inventory of Chemicals and Chemical Substances (PICCS)		Listed
Vietnam National Chemical Inventory		Listed
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)		Listed

16 Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Disclaimer

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage .