

Safety Data Sheet

Company: Yamato Gokin Co., Ltd.
Address: 〒354-0045
474 Kamitome, Miyoshi-machi, Iruma-gun, Saitama-ken, Japan
Department: Sales
Contact: Head of Sales
Phone #: 049-273-6006
Fax #: 049-273-6016
Emergency Contact
Facility: Miyoshi Gokin Kogyo Co., Ltd.
Address: 〒354-0045
508 Kamitome, Miyoshi-machi, Iruma-gun, Saitama-ken, Japan
Department: Quality Assurance
Contact: Head of Quality Assurance
Phone #: 049-258-3381
Fax #: 049-258-5279
Document Creation: 2016.11.21
English Translation: 2017.09.08

1. Product Name

BeCu25 , BeCu165 , BeCu20C

2. GHS Classification

These alloys are unclassified; GHS classification information for constituent elements is listed below.

2.1 Copper (Cu)

| | | |
|-----------------------|--|---|
| Physical Hazards | Not Classified | |
| Health Hazards | Skin Sensitization STOT - Single Exposure | Category 1A Category 1 (digestive organs) Category 3 (respiratory irritation) |
| Environmental Hazards | Not Classified | |

GHS Label Elements
Pictogram

| | |
|-------------------|---|
| Signal Word | Danger / Warning |
| Hazard Statements | H317: May cause an allergic skin reaction H335: May cause respiratory irritation H370: Causes damage to organs (digestive organs) |

Precautionary Statements

| | |
|-----------------|--|
| Safety Measures | Minimize generation and build-up of dust particles. Do not inhale dust / fumes. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection. |
|-----------------|--|

| | |
|--------------------|---|
| Emergency Measures | <p>IF ON SKIN: Wash with plenty of water.</p> <p>IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>IF exposed or concerned: Call a doctor.</p> <p>If skin irritation or rash occurs: Get medical advice/attention.</p> <p>If experiencing respiratory symptoms: Call a doctor.</p> <p>Wash contaminated clothes before reusing.</p> |
|--------------------|---|

| | |
|---------|------------------|
| Storage | Store locked up. |
|---------|------------------|

| | |
|---|------------|
| Risks not covered by GHS classification | None known |
|---|------------|

2.2 Beryllium (Be)

| | | |
|-----------------------|---|--|
| Physical Hazards | Not Classified | |
| Health Hazards | <p>Respiratory sensitization</p> <p>Skin sensitization</p> <p>Carcinogenicity</p> <p>STOT – single exposure</p> <p>STOT – repeat exposure</p> | <p>Category 1</p> <p>Category 1</p> <p>Category 1A</p> <p>Category 1 (respiratory organs)</p> <p>Category 1 (respiratory organs)</p> |
| Environmental Hazards | Aquatic environmental chronic toxicity | Category 4 |

GHS Label Elements
Pictogram



| | |
|-------------|------------------|
| Signal Word | Danger / Caution |
|-------------|------------------|

| | |
|-------------------|--|
| Hazard Statements | <p>H334: May cause allergy or asthma symptoms or breathing issues if inhaled</p> <p>H317: May cause an allergic skin reaction</p> <p>H350: May cause cancer</p> <p>H370: Causes damage to organs (respiratory organs)</p> <p>H372: Causes damage to organs through prolonged or repeated exposure (respiratory organs)</p> <p>H413: May cause long-lasting harmful effects to aquatic life</p> |
|-------------------|--|


| | |
|---|---|
| Precautionary Statements Safety Measures | <p>Minimize generation and build-up of dust particles.</p> <p>Do not inhale dust / fumes.</p> <p>Wash thoroughly after handling.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Contaminated work clothing must not be allowed out of the workplace.</p> <p>Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>In case of inadequate ventilation wear respiratory protection.</p> |
|---|---|

| | |
|--------------------|---|
| Emergency Measures | <p>IF ON SKIN: Wash with plenty of water.</p> <p>IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>IF exposed or concerned: Call a doctor.</p> <p>If skin irritation or rash occurs: Get medical advice/attention.</p> <p>If experiencing respiratory symptoms: Call a doctor.</p> <p>Wash contaminated clothes before reusing.</p> |
|--------------------|---|

| | |
|---------|------------------|
| Storage | Store locked up. |
|---------|------------------|

| | |
|---|------------|
| Risks not covered by GHS classification | None known |
|---|------------|

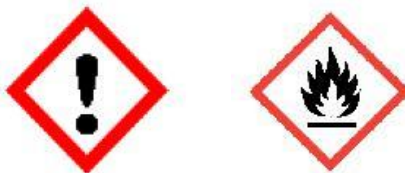
2.3 Cobalt (Co)

| | | |
|---|--|--|
| Physical Hazards | Not Classified | |
| Health Hazards | Respiratory sensitization Skin sensitization Carcinogenicity STOT – single exposure STOT – repeat exposure | Category 1 Category 1 Category 2 Category 3 (respiratory irritation) Category 1 (respiratory organs) |
| Environmental Hazards | Not Classified | |
| GHS Label Elements Pictogram |  | |
| Signal Word | Danger / Warning | |
| Hazard Statements | H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled H317: May cause an allergic skin reaction H351: Suspected of causing cancer H335: May causing respiratory irritation H372: Causes damage to organs through prolonged or repeated exposure (respiratory system, cardiovascular system, thyroid, blood) | |
| Precautionary Statements Safety Measures | Minimize generation and build-up of dust particles. Do not inhale dust / fumes. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection. | |
| Emergency Measures | IF ON SKIN: Wash with plenty of water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: Call a doctor. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a doctor. Wash contaminated clothes before reusing. | |
| Storage | Store locked up. | |
| Risks not covered by GHS classification | None known | |

2.4 Silicon (Si)

| | | |
|-----------------------|-----------------|-------------|
| Physical Hazards | Flammable solid | Category 2 |
| Health Hazards | Eye irritant | Category 2B |
| Environmental Hazards | Not Classified | |

GHS Label Elements
Pictogram



| | |
|---|---|
| Signal Word | Warning |
| Hazard Statement | H228: Flammable Solid H320: Causes eye irritation |
| Precautionary Statements Safety Measures | Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. |
| Emergency Measures | IF ON SKIN: Wash with plenty of water. |
| Storage | Store locked up. |

Risks not covered by GHS classification None known

3. Composition / Information on Ingredients

| | |
|----------------|---|
| Classification | : Mixture |
| Chemical Name | : BeCu25 & BeCu165 : Copper-Beryllium-Cobalt Alloy : BeCu20C : Copper-Beryllium-Cobalt-Silicon Alloy |

Hazardous Ingredients :

Names and composition (mass%) of Class 1 Designated Chemical Substances as per the "Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management" (PRTR Law)

| | Cu | Be | Co | Si |
|--------------------|-----------|-----------|-----------|-----------|
| Item | Copper | Beryllium | Cobalt | Silicon |
| BeCu25 Composition | bal. | 1.80~2.0 | 0.2~0.35 | - |
| BeCu165 Comp. | bal. | 1.6~1.80 | 0.2~0.35 | - |
| BeCu20C Comp. | bal. | 1.9~2.2 | 0.35~0.65 | 0.2~0.35 |
| Government No. | N/A | 394(1) | 132 | N/A |
| CAS No. | 7440-50-8 | 7440-41-7 | 7440-48-4 | 7440-21-3 |

(1) Specific Class 1 Designated Chemical Substance

4. First-Aid Measures

- Damage from fumes or dust
 - Immediately remove victim to fresh air.
 - If victim has trouble breathing, assist with breathing and seek medical attention.
- Eye contact
 - If foreign matter enters the eyes, do not rub. Wash out eyes with plenty of water.
 - If irritation persists, seek medical attention.
- Skin contact
 - Brush off foreign matter with hands and wash the affected area well with water.
 - If irritation persists, seek medical attention.

5. Fire-Fighting Measures

Not applicable (non-combustible)

6. Accidental Release Measures

Product is a solid, so accidental release / spillage is not a concern under normal environmental conditions.

7. Handling and Storage

- No special handling needed, though wearing gloves is recommended when handling products with sharp corners and edges.
- In high-humidity locations, store product indoors.

8. Exposure Controls / Personal Protection

Melting, casting, cutting, thermal cutting and grinding are classified as "dusty work" according to the "Ordinance on Prevention of Hazards Due to Dust," and must be managed accordingly.

- Keep source of dust sealed, or install local exhaust ventilation system
- Wear respiratory protective equipment
- Periodically clean up accumulated dust
- If dust gets on work clothes, clean clothes by washing
- Wash hands and gargle after working

Permissible Exposure Limit

| Material | Form | Permissible Density (mg/m ³) | |
|----------|-----------------------|--|-------|
| | | Japan Society for Occupational Health | ACGIH |
| Cu | Fumes | — | 0.2 |
| | Dust and mist (as Cu) | — | 1 |
| Be | Particles | 0.002 | 0.002 |
| Co | Particles | 0.05 | 0.02 |
| Si | Particles | — | 10 |

9. Physical and Chemical Properties

| | BeCu25 | BeCu165 | BeCu20C |
|------------------|------------------------|----------------------|----------------------|
| Appearance | : Metallic | Metallic | Metallic |
| Color | : Copper-gold | Copper-gold | Copper-gold |
| Relative Density | : 8.36 | 8.41 | 8.09 |
| Boiling Point | : N/A | N/A | N/A |
| Melting Point | : 870°C | 870°C | 980°C |
| Solubility | : Not soluble in water | Not soluble in water | Not soluble in water |
| Odor | : Odorless | Odorless | Odorless |

10. Stability and Reactivity

- Stable under normal handling conditions.
- Contact with acid or similar chemical substance may produce hydrogen gas.

11. Toxicological Information

- Acute Toxicity
 - Inhaling dust particles from fumes, etc. may induce the following: cough, chest pain, fever.
- Chronic Toxicity
 - Inhaling dust particles from fumes, etc. may induce the following: pneumoconiosis.
- Carcinogenicity

| | | |
|---------------------------------------|---|----|
| Beryllium and Be compounds | | |
| Japan Society for Occupational Health | : | 2A |
| ACGIH | : | A1 |
| Cobalt | | |
| Japan Society for Occupational Health | : | 2B |
| ACGIH | : | A3 |

12. Ecological Information

- No data on the ecological effects of this product is currently available.

13. Disposal Considerations

- Dispose of product in an environmentally conscious and appropriate manner. Disposal must be in accordance with all applicable industrial waste regulations, including prefectural and municipal requirements.

14. Transport Information

- None in particular. During sea transport, minimizing the product's exposure to sea water is recommended.

15. Applicable Regulatory Laws

- Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management
- Industrial Safety and Health Law

16. Other Information

The information on this data sheet was compiled based on our current knowledge and available documentation. It may be replaced in the event that new information becomes available. Furthermore, the precautions presented herein apply only to normal handling of the product, and do not constitute a guarantee of safety.

Cited References

Handbook of Industrial Poisoning (Ishiyaku Publishers Inc.)
Hazardous Materials Handbook (Maruzen Publishing Co., Ltd.)
Metals Data Book (Maruzen Publishing Co., Ltd.)
NITE Chemical Information Risk Platform (CHRIP)