SAFETY DATA SHEET

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product name: Bis(acetylacetonato)palladium(?)
Product code: 024-17151,020-17153

Manufacturer: FUJIFILM Wako Pure Chemical Corporation
1-2 Doshomachi 3-Chome
Chuo-ku, Osaka 540-8605, Japan
Phone: +81-6-6203-3741
Fax: +81-6-6203-5964

Supplier: FUJIFILM Wako Pure Chemical Corporation
1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan
Phone: +81-6-6203-3741
Fax: +81-6-6203-2029

Emergency telephone number: +81-6-6203-3741 / +81-3-3270-8571
Recommended uses and restrictions on use: For research use only

Section 2: HAZARDS IDENTIFICATION

GHS classification
Classification of the substance or mixture
Flammable solids: Category 2
Skin corrosion/irritation: Category 2
Serious eye damage/eye irritation: Category 2A
Specific target organ toxicity (single exposure): Category 3
  Respiratory tract irritation

Pictograms

Signal word: Warning

Hazard statements
H228 - Flammable solid
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Precautionary statements-(Prevention)
• Wash face, hands and any exposed skin thoroughly after handling
• Wear protective gloves/protective clothing/eye protection/face protection
• Avoid breathing dust/fume/gas/mist/vapors/spray
• Use only outdoors or in a well-ventilated area
• Keep away from heat/sparks/open flames/hot surfaces. — No smoking
• Ground/bond container and receiving equipment
• Use explosion-proof electrical/ventilating/lighting/equipment

Precautionary statements-(Response)
• 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 ON SKIN: Wash with plenty of soap and water
• If skin irritation occurs: Get medical advice/attention
• Take off contaminated clothing and wash before reuse
• IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
• Call a POISON CENTER or doctor/physician if you feel unwell.
• In case of fire: Use CO2, dry chemical, or foam for extinction

Precautionary statements-(Storage)
• Store in a well-ventilated place. Keep container tightly closed
• Store locked up.

Precautionary statements-(Disposal)
• Dispose of contents/container to an approved waste disposal plant

Others
Other hazards Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula C10H14O4Pd

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Weight-%</th>
<th>Molecular weight</th>
<th>ENCS</th>
<th>ISHL No.</th>
<th>CAS RN</th>
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<tbody>
<tr>
<td>Bis(acetylacetonato)palladium(II)</td>
<td>98.0</td>
<td>304.64</td>
<td>(2)-2181</td>
<td>公表</td>
<td>14024-61-4</td>
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</table>

Impurities and/or Additives : Not applicable

Section 4: FIRST AID MEASURES

Inhalation
Remove to fresh air. If symptoms persist, call a physician.

Skin contact
Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

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

Ingestion
Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Protection of first-aiders
Use personal protective equipment as required.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media
Water spray (fog), Carbon dioxide (CO2), Foam, Extinguishing powder, Sand

Unsuitable extinguishing media
No information available

Specific hazards arising from the chemical product
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Special extinguishing method
No information available

Special protective actions for fire-fighters
Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.
Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

Environmental precautions
To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for contaminant and methods and materials for cleaning up
Sweep up and gather scattered particles, and collect it in an empty airtight container.

Recovery, neutralization
No information available

Secondary disaster prevention measures
Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE

Handling
Technical measures
Flammable. Avoid contact with strong oxidizing agents. Use with local exhaust ventilation.

Precautions
Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions
Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Storage
Safe storage conditions
Keep container protect from light tightly closed. Store in a cool (2-10 °C) place. Packed with an inert gas.

Safe packaging material
Glass

Incompatible substances
Strong oxidizing agents

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls
In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Personal protective equipment
Respiratory protection
Dust mask

Hand protection
Protection gloves

Eye protection
protective eyeglasses or chemical safety goggles

Skin and body protection
Long-sleeved work clothes

General hygiene considerations
Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form
Color: yellow - yellow brown
Appearance: crystals - crystalline powder
Odor: No data available
Melting point/freezing point: 190 °C
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Boiling point, initial boiling point and boiling range</td>
<td>No data available</td>
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<tr>
<td>Flammability</td>
<td>Flammable solid</td>
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<tr>
<td>Evaporation rate:</td>
<td>No data available</td>
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<tr>
<td>Flammability (solid, gas):</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Upper : No data available</td>
</tr>
<tr>
<td></td>
<td>Lower : No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature:</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity (coefficient of viscosity)</td>
<td>No data available</td>
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<tr>
<td>Dynamic viscosity</td>
<td>No data available</td>
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<tr>
<td>Solubilities</td>
<td>N,N-Dimethylformamide : soluble .</td>
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<tr>
<td>n-Octanol/water partition coefficient:(log Pow)</td>
<td>No data available</td>
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<tr>
<td>Vapour pressure</td>
<td>No data available</td>
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<tr>
<td>Specific Gravity / Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available</td>
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<tr>
<td>Particle characteristics</td>
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**Section 10: STABILITY AND REACTIVITY**

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<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Stability</td>
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<tr>
<td>Reactivity</td>
<td>No data available</td>
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<tr>
<td>Chemical stability</td>
<td>May be altered by light.</td>
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<tr>
<td>Hazardous reactions</td>
<td>None under normal processing</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Extremes of temperature and direct sunlight, Heat, flames and sparks, static electricity, spark</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>Strong oxidizing agents</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Carbon monooxide (CO), Carbon dioxide (CO2), Metal oxides</td>
</tr>
</tbody>
</table>

**Section 11: TOXICOLOGICAL INFORMATION**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>No data available</td>
</tr>
<tr>
<td>Skin irritation/corrosion</td>
<td>No data available</td>
</tr>
<tr>
<td>Serious eye damage/ irritation</td>
<td>No data available</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>No data available</td>
</tr>
<tr>
<td>Reproductive cell mutagenicity</td>
<td>No data available</td>
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<tr>
<td>Carcinogenicity</td>
<td>No data available</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>No data available</td>
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<tr>
<td>STOT-single exposure</td>
<td>No data available</td>
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<tr>
<td>STOT-repeated exposure</td>
<td>No data available</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>No data available</td>
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**Section 12: ECOLOGICAL INFORMATION**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Ecotoxicity</td>
<td>No information available</td>
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<tr>
<td>Other data</td>
<td>No data available</td>
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</table>
Persistence and degradability: No information available
Bioaccumulative potential: No information available
Mobility in soil: No information available
Hazard to the ozone layer: No information available

Section 13: DISPOSAL CONSIDERATIONS

Waste from residues
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated container and contaminated packaging
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION

ADR/RID
- UN number: UN1325
- Proper shipping name: Flammable solid, organic, n.o.s. (Bis(acetylacetonato)palladium(II))
- UN classification: 4.1
- Subsidiary hazard class: III
- Packing group: III
- Marine pollutant: Not applicable

IMDG
- UN number: UN1325
- Proper shipping name: Flammable solid, organic, n.o.s. (Bis(acetylacetonato)palladium(II))
- UN classification: 4.1
- Subsidiary hazard class: III
- Packing group: III
- Marine pollutant (Sea): Not applicable
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: No information available

IATA
- UN number: UN1325
- Proper shipping name: Flammable solid, organic, n.o.s. (Bis(acetylacetonato)palladium(II))
- UN classification: 4.1
- Subsidiary hazard class: III
- Packing group: III
- Environmentally Hazardous Substance: Not applicable

Section 15: REGULATORY INFORMATION

International Inventories
- EINECS/ELINCS: Listed
- TSCA: Listed

Japanese regulations
- Fire Service Act: Not applicable
- Poisonous and Deleterious Substances Control Law: Not applicable
- Industrial Safety and Health Act: Not applicable
- Regulations for the carriage and storage of dangerous goods in ship: Flammable Solids - Flammable Solids (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
- Civil Aeronautics Law: Flammable Solids (Ordinance Art.194, MITL Nortification for Air Transportation of Explosives etc., Attached Table 1)
- Pollutant Release and Transfer Register Law: Not applicable
- Export Trade Control Order: Not applicable
### Section 16: OTHER INFORMATION

**Key literature references and sources for data etc.**

<table>
<thead>
<tr>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>NITE: National Institute of Technology and Evaluation (JAPAN)</td>
</tr>
<tr>
<td><a href="http://www.safe.nite.go.jp/japan/db.html">http://www.safe.nite.go.jp/japan/db.html</a></td>
</tr>
<tr>
<td>IATA dangerous Goods Regulations</td>
</tr>
<tr>
<td>RTECS:Registry of Toxic Effects of Chemical Substances</td>
</tr>
<tr>
<td>Japan Industrial Safety and Health Association GHS Model SDS</td>
</tr>
<tr>
<td>Dictionary of Synthetic Organic Chemistry , SSOJC, Koudansha Scientific Co.Ltd.</td>
</tr>
<tr>
<td>Chemical Dictionary, Kyoritsu Publishing Co., Ltd.</td>
</tr>
<tr>
<td>etc</td>
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**Disclaimer**

This SDS is according to JIS Z 7253: 2019. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The 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, unless specified in the text.

GHS Classification is according to JIS Z7252(2019). *JIS: Japanese Industrial Standards*

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End of Safety Data Sheet