

**Safety data sheet**  
**According to Regulation n. 1907/2006 and Regulation 878/2020**  
**BLUCLAD 750 RPM 200**



Revision n. XI – 11.09.2024

Replaces revision n X – 02.04.2024

**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**1.1 Product identifier**

**Chemical name** Tetraamminepalladium(2+) dichloride  
**Product code** 175  
 1175  
 C.A.S. 13815-17-3  
 EC number 237-489-7  
 Molecular weight 245.45 g/mol  
 Raw formula Pd(NH<sub>3</sub>)<sub>4</sub>Cl<sub>2</sub>  
 Commercial name BLUCLAD 750 RPM 200

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

Intended uses Industrial use. Additive for electroplating.  
 Advised against uses None in particular

**1.3 Details of the supplier of the safety data sheet**

Name FAGGI ENRICO S.P.A.  
 Address Via Majorana, 101/103 50019 Sesto Fiorentino FI  
 Telephone number 055311861  
 Fax number 055311791  
 Competent person responsible for the safety data sheet lorenzo.magaldi@faggi.it

**1.4 Emergency telephone number** 111 - Medical helpline operating in England, in Scotland (NHS 24) and in Wales (NHS Direct Wales)  
**1.5 Reach registration number** 01-2120253959-38-0007

**2. HAZARDS IDENTIFICATION**

**2.1 Classification of the substance or mixture**

Hazard classes	Category codes	Hazard statements
Met corr.	1	H290
Acute Tox.	4	H302
Skin Sens.	1 A	H317
Eye Irrit.	2	H319
Aquatic acute	1	H400
Aquatic Chronic	1	H410

**2.2 Label elements**

**Pictograms**



**Signal words**

**WARNING**

**Hazard statements**

H290	May be corrosive to metals
H302	Harmful if swallowed
H317	May cause allergic skin reactions
H319	Causes severe eye damage
H410	Very toxic to aquatic life with long lasting effects

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<b>Precautionary statements</b>	P261	Avoid breathing dust / fume / gas / mist / vapors and / aerosols
	P280	Wear protective gloves / clothing / protect eyes and face
	P301+P312	IF SWALLOWED accompanied by discomfort, contact a poison control center or doctor
	P302+P352	IN CASE OF CONTACT WITH SKIN, wash thoroughly with soap and water
	P305+P351+P338	IN CASE OF CONTACT WITH THE EYES rinse thoroughly for several minutes. Remove any contact lenses if easy to do. Continue rinsing.
	P273	Do not disperse in the environment.
	P501	Dispose of the product / container in accordance with local / regional / national / international regulations
<b>2.3 Other hazards</b>		It does NOT contain PBT / vPvB substances according to Regulation (EC) 1907/2006, annex XIII It does NOT contain substances that interfere with the endocrine system in accordance with Regulation (EC) 1907/2006 art.59 paragraph 1 and in accordance with the criteria established in Regulation (EU) 2017/2100 and Regulation (EU) 2018/605.
<b>3.</b>	<b>Reach registration number</b>	01-2120253959-38-0007
	<b>COMPOSITION/INFORMATION ON INGREDIENTS</b>	
<b>3.1</b>	<b>Substance</b>	
	CAS number	13815-17-3
	EC number	237-489-7
	INDEX number	Not available
	M factor: acute toxicity	100
	Factor M: chronic toxicity	10
	ATE	Oral: LD50 933 mg/kg bw (rat) Dermal: LD50 2 000 mg/kg bw (rat) Inhalation: studies scientifically unjustified
<b>4.</b>	<b>FIRST AID MEASURES</b>	
	<b>4.1</b>	<b>Description of first aid measures</b>

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Inhalation	Take the person to a very well ventilated area and consult a doctor for safety. If the person is unconscious, keep him stable on his side during transport.
Ingestion	Call a doctor immediately. Do not give to drink or eat.
Contact with skin	It can cause allergic reactions
Contact with eyes	Rinse with plenty of running water for at least 15 minutes while keeping the eyelids open (remove contact lenses if it is easy to do so). Consult an ophthalmologist.

Recommendations:

	YES
• Need to see a doctor immediately	YES
• Possibility of delayed effects following exposure	YES
• Move the exposed individual from the place of exposure to the open air	YES
• Remove the clothing and shoes of the exposed individual	With gloves
• How to handle contaminated clothing	YES

**4.2 Most important symptoms and effects, both acute and delayed**

Harmful if swallowed. It can cause allergic skin reactions. Causes severe eye damage.

**4.3 Indication of any immediate medical attention and special treatment needed**

In case of skin contact or inhalation, call a physician immediately.

**5. FIREFIGHTING MEASURES**

**5.1 Extinguishing media**

Suitable extinguishing media      CO2 or powder or water spray extinguishers. Extinguish large fires with water spray or alcohol-resistant foam.

Unsuitable extinguishing media      None in particular

**5.2 Special hazards arising from the substance or mixture**

If heated, it can generate ammonia vapors.

**5.3 Advice for firefighters**

General information: Prevent the water used to extinguish the fire from flowing into the sewer, groundwater or surface water.

Equipment: Normal fire-fighting clothing, such as self-contained open-circuit compressed air breathing apparatus (EN137), flame retardant suit (EN469), flame retardant gloves (EN659) and firefighter boots (HOA29 or A30)

**6. ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures**

**6.1.1. For non-emergency personnel**

Keep away from contaminated area and keep upwind

**6.1.2. For emergency responders**

Use :

Chemical risk gloves compliant with EN420 EN374 standards

Splash goggles compliant with Directive 89/686 / EEC and standard EN166: 2001

Complete antacid clothing compliant with the UNI EN 13034: 2006 type 6 standard

Mask with K-type filters

**6.2 Environmental precautions**

Prevent infiltration into the sewer, groundwater and surface water.

In the event of infiltration into bodies of water or sewers, notify the competent authorities.

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In case of penetration into the ground, notify the competent authorities.

**6.3 Methods and material for containment and cleaning up**

**6.3.1. Advice in order to contain a spill**

Collect product.

**6.3.2. Advice in order to clean-up a spill**

Wash with water

**6.3.3 Other information**

Disposal of contaminated material in accordance with point 13. Provide adequate ventilation.

**6.4 Reference to other sections**

None

**7. HANDLING AND STORAGE**

**7.1. Precautions for safe handling**

**7.1.1. *Raccomentations in order to manipulate the substance or the mixture in a safe manner, such as containment measures and prevention of fire and aerosol and powders formation***

Store in original and labeled packaging. Use under suction. Close the jars immediately after use. Use is permitted only to trained and informed personnel.

**7.1.2. *General recommendation on work hygiene***

Do not eat, drink and smoke in work areas. Wash your hands after use. Remove contaminated clothing and protective equipment before entering eating areas

**7.2. Conditions for safe storage, including any incompatibilities**

**7.2.1. *Risk management associated with explosive atmospheres, corrosive conditions, flammability hazards, incompatible substances or mixtures, evaporative conditions, potential ignition sources***

Close the packaging immediately after use

**7.2.2. *Control of weather conditions, ambient pressure, temperature, sunlight, humidity, and vibration***

Store in the original container protected from direct sunlight in a dry, cool and well-ventilated area.

**7.2.3. *Conditions to maintain the integrity of the substance or mixture***

Store in original closed packaging

**7.2.4. *Advice regarding the ventilation, specific design for storage rooms or vessels, quantity limits under storage conditions, packaging compatibilities***

Use ADR approved packaging

**7.3. Specific end use(s)**

Industrial use. Additive for electroplating

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1. Control parameters**

**SUBSTANCE: PALLADIUM DICHLOROTETRAMMINE**

**DNEL**

**Workers**

Systemic effects for long-term exposure – inhalation: 0.19 mg/m<sup>3</sup>

Systemic effects for short-term exposure – inhalation: no hazard identified

Local effects for long-term exposure – inhalation: moderate hazard (no derived threshold)

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Local effects for short-term exposure – inhalation: moderate hazard (no derived threshold)  
Systemic effects for long-term exposure – dermal: 0.27 mg/kg body weight per day  
Systemic effects for short-term exposure – dermal: no hazard identified  
Local effects for long-term exposure – dermal: high hazard (no derived threshold)  
Local effects for short-term exposure – dermal: high hazard (no derived threshold)  
Eye hazards: low hazard (no derived threshold)

**General population.**

Hazard unknown but no further information is needed as no exposure is expected

**PNEC**

Freshwater: 45 ng/L

Marine water: 4 ng/L

Sewage treatment plants: 526 µg/L

Sediment (freshwater): 0.274 mg/kg dry sediment

Sediment (marine water): 0.027 mg/kg dry sediment

Soil: 0.02 mg/kg dry soil

**8.2.**

**Exposure controls**

**8.2.1. Appropriate engineering controls**

Periodically check the range of the extractor hood

**8.2.2. Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Protective goggles for eyes compliant with Directive 89/686 / EEC and with standard EN166: 2001

**Skin protection (hands)**

Chemical risk gloves compliant with EN420 EN374 standards

Material : Nitrile rubber

Break through time : 240 min

Glove thickness : 0,38 mm

**Skin protection (body)**

Protective clothing compliant with UNI EN 13034: 2006 type 6

**Respiratory protection**

Semi-facial masks with ABEK-P3 filters compliant with 14387: 2004 + A1: 2008 standards in the absence of technical measures to limit worker exposure

**Thermal hazards**

Data not available

**8.2.3. Environmental exposure controls**

Maintain suction in all environments using localized collection and ambient air exchange systems. Convey the aspirated volumes to an abatement system and then into the atmosphere. Do not use recirculating air suction systems. Avoid any spill into the environment

**9.**

**PHYSICAL AND CHEMICAL PROPERTIES**

**9.1**

**Information on basic physical and chemical properties**

Physical state

Solid

Colour

Yellow

Odour

Odorless

Melting point/freezing point

450 °C

Boiling point or initial boiling point and boiling range

Decomposes starting at 300°C

Flammability

Not inflammable

Lower and upper explosion limit

Not explosive

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	Flash point	Not inflammable
	Auto-ignition temperature	Not inflammable
	Decomposition temperature	300 ° C
	pH	Not applicable
	Kinematic viscosity	Not applicable
	Solubility	327 g / l in water at 20 ° C
	Partition coefficient n-octanol/water (log value)	Not applicable
	Vapour pressure	0 Pa at 20 ° C
	Density and/or relative density	1,86 g/cm <sup>3</sup> at 20 ° C
	Relative vapour density	Not applicable
	Particle characteristics	<100 µm: 16.2%
<b>9.2.</b>	<b>Other information</b>	
	None	
<b>10.</b>	<b>STABILITY AND REACTIVITY</b>	
<b>10.1</b>	<b>Reactivity</b>	
	The substance reacts violently to heat with strong reducing agents	
<b>10.2</b>	<b>Chemical stability</b>	
	The substance is stable	
<b>10.3</b>	<b>Possibility of hazardous reactions</b>	
	No relevant information	
<b>10.4</b>	<b>Conditions to avoid</b>	
	None in particular	
<b>10.5</b>	<b>Incompatible materials</b>	
	Strong reducing agents	
<b>10.6</b>	<b>Hazardous decomposition products</b>	
	Ammonia, ammonium chloride	
<b>11.</b>	<b>TOXICOLOGICAL INFORMATION</b>	
<b>11.1</b>	<b>Information on hazard classes as defined in Regulation (EC) No 1272/2008</b>	
	<b>Acute toxicity</b>	Oral: LD50 933 mg/kg bw (rat) Dermal: LD50 2 000 mg/kg bw (rat) Inhalation: studies scientifically unjustified
	<b>Acute inhalation toxicity</b>	May have irritating effects
	<b>Acute dermal toxicity</b>	Causes severe eye damage
	<b>Skin corrosion / irritation</b>	Causes eye irritation
	<b>Serious eye damage/irritation</b>	Based on available data, the classification criteria are not met
	<b>Respiratory or skin sensitization</b>	Based on available data, the classification criteria are not met
	<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met
	<b>Carcinogenicity</b>	Based on available data, the classification criteria are not met

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	<b>Reproductive toxicity</b>	Based on available data, the classification criteria are not met
	<b>STOT – single exposure</b>	Based on available data, the classification criteria are not met
	<b>STOT – repeated exposure</b>	Based on available data, the classification criteria are not met
<b>11.2</b>	<b>Information on other hazards</b>	
	DOES NOT contain substances that interfere with the endocrine system according to Regulation (EC) 1907/2006 art.59 paragraph 1 and in accordance with the criteria established in Regulation (EU) 2017/2100 and Regulation (EU) 2018/605.	
<b>12.</b>	<b>ECOLOGICAL INFORMATION</b>	
<b>12.1</b>	<b>Toxicity</b>	PNEC (freshwater) 45 ng/L PNEC (Marine water) 4.5 ng/L LC50 (4 days) 154 - 530 µg/L (fish) LC10 (4 days) 90.4 - 180 µg/L (fish) NOEC (4 days) 320 µg/L (fish) NOEC (21 days) 14.3 - 102 µg/L (invertebrates) EC10 (21 days) 35.7 - 84.9 µg/L (invertebrates)
<b>12.2</b>	<b>Persistence and degradability</b>	Not applicable
<b>12.3</b>	<b>Bioaccumulative potential</b>	No information available
<b>12.4</b>	<b>Mobility in soil</b>	Log Kp(solids-water in soils): 2.64
<b>12.5</b>	<b>Results of PBT and vPvB assessment</b>	Not applicable
<b>12.6</b>	<b>Endocrine disrupting properties</b>	No known effects
<b>12.7</b>	<b>Other adverse effects</b>	No known effects
<b>13.</b>	<b>DISPOSAL CONSIDERATIONS</b>	
<b>13.1.</b>	<b>Waste treatment methods</b>	
	The mixture and its packaging must be disposed of as hazardous waste and delivered to authorized companies.	
<b>14.</b>	<b>TRANSPORT INFORMATION</b>	
<b>14.1</b>	<b>UN number or ID number</b>	1759
<b>14.2</b>	<b>Official UN shipping name</b>	Corrosive solid n.o.s. (palladium dichloro tetramino)
<b>14.3</b>	<b>Transport hazard class(es)</b>	
	ADR/RID/IMDG/ICAO-IATA: Class:	8
	ADR/RID/IMDG/ICAO-IATA: Label:	8 + Mark enviromental hazard
	ADR: Tunnel restriction code	(E)
	IMDG - EmS:	F-A, S-B
<b>14.4</b>	<b>Packing group</b>	
<b>14.5</b>	<b>Dangers for the environment</b>	
	ADR/RID/ICAO-IATA:	Product dangerous for enviroment
	IMDG: Marine Contaminant:	Yes
<b>14.6</b>	<b>Special precautions for user</b>	Transport must be carried out by vehicles authorized for the transport of dangerous goods according to the provisions of the current edition of the A.D.R. Agreement.

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and the applicable national provisions. Transport must be carried out in the original packaging and, in any case, in packaging which is made of materials which cannot be attacked by the contents, and which are not likely to generate dangerous reactions. Those responsible for loading and unloading dangerous goods must have received appropriate training on the risks presented by the preparation and on any procedures to be adopted in the event of emergency situations.

**14.7** **Maritime transport in bulk according to IMO instruments** Bulk transport is not foreseen

**15. REGULATORY INFORMATION**

<b>15.1</b>	<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	<b>Applicability</b>
	Reg. (EC) 1907/2006 / EC Reach	YES
	Reg. (EC) 1272/2008 CLP and subsequent changes and additions	YES
	Reg. (CE) 2037/2000 "Substances that deplete the ozone layer"	NO
	Reg. (EC) 850/2004 "Persistent organic pollutants"	NO
	Reg. (EC) 689/2008 "export and import of dangerous chemicals"	NO
	Substance listed in Annex I of Dir. 2012/18 / EU so-called Seveso	NO
	Legislative Decree 81/2008 Consolidated Law on health and safety at work	YES
	Directive 2014/103 / EU "Adr"	YES
	Reg. (CE) 1907/2006/CE Reach art. 59 – Candidate List of Substances of Very High Concern (SVHC)	NO
	Reg. (CE) 1907/2006/CE Reach - Annex XIV – Authorisation List	NO
	Reg. (CE) 1907/2006/CE Reach - Annex XVII – Restriction List <a href="https://echa.europa.eu/it/substances-restricted-under-reach">https://echa.europa.eu/it/substances-restricted-under-reach</a>	Limited use Item 75 (check link)

**15.2** **Chemical safety assessment**  
A chemical safety assessment was not carried out

**16. OTHER INFORMATION**

**16.1** **Changes compared to the previous edition**

Changes to sections 1-8-9-14-16

**16.2** **Acronym and abbreviation legend**

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

GHS: Globally Harmonized System of Classification and Labeling of Substances

EINECS: European Inventory of Chemical Substances

CAS: Chemical Abstract Service

STA: Acute Toxicity Estimate

PBT: Persistent, Bioaccumulative and Toxic.

vPvB: (very persistent and very bioaccumulative). Very persistent and very



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bioaccumulative

LD: lethal dose

PNEC: predicted no effect concentration

DNEL: derived no effect level

TLV (ceiling value): threshold limit value

STEL: short-term exposure limit

EU-OEL: European occupational exposure limit

TWA: time-weighted average

EC: effective concentration

NOAEL: no observed adverse effect level

LC: lethal concentration

NOEC: no observed effect concentration

LOEC: lowest observed effect concentration

Bw: body weight

Koc: organic carbon-water partition coefficient

**16.3 Main references and data sources**

ECHA's data bank on registered substances and soon to be registered substances:

<https://chem.echa.europa.eu/>

**16.5 Adequate training for workers in order to ensure the protection of human health and the environment**

Training on Chemical Risk pursuant to Legislative Decree 81/08 Title IX dangerous substances

PPE training