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

1.1 Product identifier

Chemical name	Bis (acetonitrile) palladium (II) chloride
Product code	344
CAS number	14592-56-4
EC number	238-637-3
Molecular weight	259,4 g/mol
Raw formula	$C_4H_6Cl_2N_2Pd$

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

Recommended uses	Industrial use. Catalyst for synthesis.
Uses adviced against	None in particular

1.3 Details of the supplier of the safety data sheet

Name	FAGGI ENRICO S.P.A.
Adress	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 Registration number Exempt under art. 6(1)

2 HAZARDS IDENTIFICATION

2.1 Classification of the mixture according to Regulation (EC) n. 1272/2008

Hazard class	**Category codes**	**Hazards indications**
Acute Tox. (oral)	3	H301 Toxic if swallowed
Acute Tox. (dermal)	3	H311 Toxic if on skin
Acute Tox. (inhalation)	3	H331 Toxic if inhaled

2.2 Label elements

Pictograms



Signal word **DANGER**

Hazard statements

H301	Toxic if swallowed
H311	Toxic if on skin
H331	Toxic if inhaled

Precautionary advice

P270	Do not eat, drink or smoke when using this product
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352	IF ON SKIN: Wash with plenty of water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.

2.3 Other hazards

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.

3 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance: Bis (acetonitrile) palladium (II) chloride

CAS number 14592-56-4
CE number 238-637-3
INDEX number Not available
M factor Not applicable
ATE (oral) 100 mg/kg bw
ATE (dermal) 300 mg/kg bw
ATE (inhalation) 0.5 mg/l as dust

4 FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation	Take the person to a very well-ventilated area and consult a doctor immediately. If the person is unconscious, keep him stable on his side during transport. If not breathing, give artificial respiration.
Ingestion	Call a doctor immediately. Give water immediately (maximum of 2 glasses).
Contact with skin	Wash immediately with soap and water and rinse thoroughly.
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:

• Need to see a doctor immediately	YES
• Possibility of delayed effects following exposure	NO
• Move the exposed individual from the place of exposure to the open air	YES
• Remove the clothing and shoes of the exposed individual	YES
• How to handle contaminated clothing	With gloves
• For those who take first care, wear PPE	YES

4.2 Most important symptoms and effects, both acute and delayed

No data available

4.3 Indication of any immediate medical attention and special treatment needed

Consult a doctor immediately.

5 FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	CO_2, powder or water spray. Extinguish large fires with water spray or alcohol-resistant foam.
Unsuitable extinguishing media	None

5.2 Special hazards arising from the substance or mixture

Avoid breathing fumes. If involved in a fire, the following may develop: carbon monoxide, hydrochloric acid, nitrogen oxides.

5.3 Advice for firefighters

Avoid breathing fumes. Prevent the water used to extinguish the fire from flowing into the sewer, groundwater or surface water.
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

Move away from the contaminated area immediately and keep to windward.

6.1.2. For emergency responders

Wear: Chemical risk gloves compliant with EN420 EN374 Standards
Complete clothing compliant with the UNI EN 13034: 2006 standard
Semi-face masks with ABEK2P3 R filters conforming to EN14387: 2004 + A1: 2008

6.2 Environmental precautions

Prevent infiltration into the sewer, groundwater and surface water. In case of penetration into the ground or infiltration of bodies of water, notify the competent authorities..

6.3 Methods and material for containment and cleaning up

6.3.1. Advice in order to contain a spill

Avoid formation of dust

6.3.2. Advice in order to clean-up a spill

Wash the contaminated area with water.

6.3.3 **Other information**

None.

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 containement measures and prevention of fire and aereosol and powders formation

Keep containers tightly closed in a cool and dry place

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 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

Do not store along with oxidizing agents

7.2.2 Containment of the effects of weather conditions, pressure, temperature, sunlight, humidity and vibrations

Keep away from humidity, air and direct light.

7.2.3 Conditions for keeping substances / mixtures intact

Store in closed and labeled containers. Close the containers immediately after use.

***7.2.4* Provisions relating to ventilation, specific design of storage rooms or containers, quantitative limits in storage conditions, compatibility of packaging**

The storage rooms must be cool and dry. Store in an area without drains or access to sewers

7.3. Specific end use(s)

Industrial use. Catalyst for synthesis

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

For this substance, the occupational and biological exposure limit values corresponding to the relative Community limit values referred to in Directives 98/24 / EC and 2004/37 / EC have not been established.

DNEL

No data available up to now

PNEC

No data available up to now

8.2. Exposure controls

8.2.1 Appropriate engineering controls

Use under a fume hood. Periodically check the range of the hood.

8.2.2 Individual protection measures, such as personal protective equipment

Eye/face protection	Splash goggles compliant with Directive 89/686 / EEC and with standard EN166: 2001
Skin protection (hands)	Protective gloves in latex or nitrile rubber, compliant with EU Directive 89/89 / EEC and the resulting standards (EN374). The breakthrough time of the gloves must be ≥ 480 min and the thickness 0.11 mm.
Skin protection (body)	Complete clothing compliant with UNI EN 13034: 2006 type 6
Respiratory protection	Mask with P2 filters
Thermal hazards	None

8.2.3 Environmental exposure controls

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

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Solid
Color	Yellow
Odor	Odorless
Melting point / freezing point	Data not available

		Boiling point or initial boiling point and boiling range	Not applicable
		Flammability	Not inflammable
		Lower and upper explosive limits	Not explosive
		Flash point	Not inflammable
		Self-ignition temperature	Not inflammable
		Decomposition temperature	Data not available
		pH	Not defined
		Cinematic viscosity	Not applicable
		Solubility	Insoluble
		Production coefficient n-octanol / water (logarithmic value)	Not applicable
		Vapor pressure	Not applicable
		Density and / or relative density	Data not available
		Relative vapor density	Not applicable
		Characteristics of the particles	Data not available
	9.2.	**Other information**	
		None	
10		**STABILITY AND REACTIVITY**	
	10.1	**Reactivity**	
		The product has catalytic properties	
	10.2	**Chemical stability**	
		The product is stable under normal conditions of use.	
	10.3	**Possibility of hazardous reactions**	
		May react violently with strong oxidizing agents	
	10.4	**Conditions to avoid**	
		Humidity	
	10.5	**Incompatible materials**	
		Oxidizing agents, steel, aluminium	
	10.6	**Hazardous decomposition products**	
		Carbon monoxide, hydrochloric acid, nitrogen oxides	
11		**TOXICOLOGICAL INFORMATION**	
	11.1	**Information on hazard classes as defined in Regulation (EC) No 1272/2008**	
		Acute toxicity	ATE (oral) 100 mg/kg bw ATE (dermal) 300 mg/kg bw ATE (inhalation) 0.5 mg/l as dust
		Skin corrosion / irritation	Data not available
		Serious eye damage/irritation	Data not available
		Respiratory or skin sensitization	Data not available
		Germ cell mutagenicity	Data not available
		Carcinogenicity	Data not available
		Reproductive toxicity	Data not available
		STOT – single exposure	Data not available
		STOT – repeated exposure	Based on the available data, the classification criteria are not met
	11.2	**Information on other hazards**	
		None	
12		**ECOLOGICAL INFORMATION**	

	12.1	**Toxicity**	Based on available data, the classification criteria are not met
	12.2	**Persistence and degradability**	No information available
	12.3	**Bioaccumulative potential**	No information available
	12.4	**Mobility in soil**	No information available
	12.5	**Results of PBT and vPvB assessment**	Not applicable
	12.6	**Endocrine disrupting properties**	No known effects
	12.7	**Other adverse effects**	None known
13		**DISPOSAL CONSIDERATIONS**	
	13.1.	**Waste treatment methods**	
		The substance and its packaging must be disposed of as hazardous waste by authorized companies.	
14		**TRANSPORT INFORMATION**	
	14.1	**UN number or ID number**	UN2811
	14.2	**Official UN shipping name**	
		ADR/RID/ADN/IMDG/ICAO-IATA:	Toxic, solid, organic n.o.s. (Bis(acetonitrile)palladiu(II) chloride)
	14.3	**Transport hazard class(es)**	
		ADR/RID/ADN/IMDG/ICAO-IATA: Class	6.1
		ADR/RID/ADN/IMDG/ICAO-IATA: Label	6.1
		ADR: Tunnel restriction code	(D/E)
		IMDG - EmS:	F-A, S-A
	14.4	**Packing group**	II
	14.5	**Dangers for the environment**	
	14.6	ADR/RID/ADN/ICAO-IATA:	NO
		IMDG: Marine Contaminant:	NO
		Special precautions for user	
		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. 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**	
	15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture**	**Applicability**
		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	NO
	https://echa.europa.eu/it/substances-restricted-under-reach	(check link)

15.2 **Chemical safety assessment**

A chemical safety assessment was not carried out

16 **OTHER INFORMATION**

Changes compared to the previous edition

Changes to sections 1-2-8-14-16

Production site

The substance is produced in the Faggi Enrico S.p.A. plant. located in via dei Cattani 222, 50145 Florence

Acronim 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 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

Main references and data sources

ECHA's data bank on registered substances and soon to be registered substances: https://chem.echa.europa.eu/

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

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