

Safety information sheet
According to Regulation n. 1907/2006 and Regulation 878/2020



TETRAKIS

Revision n. 10 – 23.09.2024

Replaces revision n. 9 – 14.12.2023

1.	IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE COMPANY		
1.1	Product identifier		
	Chemical name	Tetrakis(triphenylphosphine)palladium(0)	
	Product code	190	
	Registration number	Exempt according to art. 2(7d) as recovered substance	
	C.A.S.	14221-01-3	
	EINECS number	238-086-9	
	Molecular weight	1155,56 g/mol	
	Raw formula	C ₇₂ H ₆₀ P ₄ Pd	
	Commercial name	Tetrakis	
1.2	Relevant identified uses of the mixture and advised uses		
	Recommended uses: industrial use. Catalyst for pharmaceutical industry.		
	Uses advised against: none in particular		
1.3	Information on 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).	
2.	HAZARDS IDENTIFICATION		
2.1	Classification of the substance or mixture according to Regulation (EC) n. 1272/2008		
	Hazard classes	Category codes	Hazard statements
	Aquatic chronic	4	H413
2.2	Label elements		
	Pictograms	None	
	Signal word	WARNING	
	Hazard statements	H413 May be harmful to aquatic life with long lasting effects	
	Precautionary advice	P273 Do not release into the environment P501 Dispose of contents / container in accordance with local / regional / national / international	
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		
	CAS number	14221-01-3	
	EC number	238-086-9	
	Index number:	Not available	

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	M factor (chronic)	1
	ATE	Not applicable
4.	FIRST AID MEASURES	
4.1	Description of first aid measures	
	Inhalation: Take the person to a very well ventilated area and for safety consult a doctor.	
	Ingestion: Call a doctor immediately. Give water immediately (at least 2 glasses)	
	Skin contact: Wash off immediately with soap and water and rinse thoroughly.	
	Eye contact: Rinse with plenty of running water for at least 15 minutes while keeping the eyelids open (remove contact lenses if easily possible). 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 open air	YES
	• Remove clothing and shoes of the exposed individual	YES
	• How to handle contaminated clothing	With gloves
	• For those providing first aid, wear PPE	YES
4.2	Most important symptoms and effects, both acute and delayed	
	No known significant effects or criticalities	
4.3	Indication of any need to immediately consult a doctor and special treatments	
	Consult a physician immediately	
5.	FIREFIGHTING MEASURES	
5.1	Extinguishing media	
	Suitable 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	
	In case of fire it can generate toxic fumes (phosphorus oxides, carbon monoxide)	
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	
		Keep away from contaminated area
	6.1.2. For emergency responders	
		Use: Protective gloves in nitrile rubber, compliant with standard (EN374) Semi-face mask with P2 filters Complete clothing with chemical protection in compliance with UNI EN 13034: 2006 type 6.
6.2	Environmental precautions	
	Prevent spillage into sewers or waterways.	
6.3	Methods and materials for containment and cleaning up	

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	6.3.1.	Advice to contain a spill	
		Avoid the formation of dust	
	6.3.2.	Advice to clean-up a spill	
		Wash the contaminated area with water.	
	6.3.3.	Any other information	
		None	
6.4	References to other sections		
	None		
7.	HANDLING AND STORAGE		
7.1.	Precautions for Safe Handling		
	7.1.1.	Recommendations that allow the substance or mixture to be handled safely, such as containment and prevention measures for fires and for the formation of aerosols and dusts	
		No special measures are required.	
	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	
		Keep in the original packaging and close them immediately after use.	
	7.2.2.	Control of weather conditions, ambient pressure, temperature, sunlight, humidity, and vibration	
		Keep in a cool and dry place	
	7.2.3.	Conditions for keeping substances / mixtures intact	
		Store at a temperature between 2 and 8 ° C and in an inert atmosphere.	
	7.2.4.	Advice regarding the ventilation, specific design for storage rooms or vessels, quantity limits under storage conditions, packaging compatibilities	
		Store in an area without drains or access to sewers and away from humidity and direct light.	
7.3.	Specific end uses		
	Industrial use. Catalyst for the pharmaceutical industry		
8.	EXPOSURE CONTROL / 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: Data not available		
	PNEC: Data not available		
8.2.	Exposure controls		
	8.2.1.	Appropriate technical controls	
		Use under a fume hood	
	8.2.2.	Individual protection measures, such as personal protective equipment	
		Eye / face protection	Splash goggles compliant with Directive 89/686 / EEC and standard EN166: 2001

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		Skin protection (hands)	Chemical gloves according to EN 420 EN 374 Glove material: Nitril rubber Material thickness: 0.5 mm Penetration time: ≥ 480 min DIN EN374 method
		Skin protection (body)	Complete clothing with chemical protection in compliance with the UNI EN 13034: 2006 type 6 standard
		Respiratory protection	Semi-face 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 spill into the environment.	
9.		PHYSICAL AND CHEMICAL PROPERTIES	
	9.1	Information on basic physical and chemical properties	
		Physical state	Crystalline powder
		Color	Yellow green
		Smell	Odorless
		Melting point / freezing point	Not applicable
		Boiling point or initial boiling point and boiling range	It decomposes
		Flammability	Not inflammable
		Lower and upper explosive limits	Not explosive
		Flash point	Not inflammable
		Self-ignition temperature	Not inflammable
		Decomposition temperature	50 ° C
		pH	Undefined
		Kinematic viscosity	Not applicable
		Solubility	Insoluble in water
		Partition coefficient n-octanol / water (logarithmic value)	Log Kow 5.69 at 20 ° C (data relating to the substance triphenylphosphine)
		Vapor pressure	Not applicable
		Density and / or relative density	1.36 g / cm ³
		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 oxidizes in contact with air	

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	10.3	Possibility of hazardous reactions	
		May react violently with hot nitric or sulfuric acid	
	10.4	Conditions to avoid	
		Do not expose it to the oxidizing action of the air.	
	10.5	Incompatible materials	
		Information not available	
	10.6	Hazardous decomposition products	
		The product does not decompose under normal conditions of use.	
11.		TOXICOLOGICAL INFORMATION	
	11.1	Information on hazard classes as defined in Regulation (CE) No 1272/2008	
		Acute toxicity	No data available
		Skin corrosion / irritation	Based on available data, the classification criteria are not met
		Serious eye damage / eye irritation	Based on available data, the classification criteria are not met
		Respiratory or skin sensitization	Based on available data, the classification criteria are not met
		Germ cell mutagenicity	Not available data
		Carcinogenicity	Not available data
		Reproductive toxicity	Not available data
		Specific target organ toxicity (STOT) single exposure	Not available data
		Specific target organ toxicity (STOT) repeated exposure	Not available data
	11.2	Information on other hazards	
		None	
12.		ECOLOGICAL INFORMATION	
	12.1	Toxicity	Not available data
	12.2	Persistence and degradability	Not available data
	12.3	Bioaccumulation potential	Not available data
	12.4	Mobility in soil	Not available data
	12.5	Results of PBT and vPvB assessment	Not applicable
	12.6	Endocrine disrupting properties	No known effect
	12.7	Other adverse effects	No known effect
13.		DISPOSAL CONSIDERATIONS	
	13.1.	Waste treatment methods	
		The substance and its packaging must be disposed of as hazardous waste and delivered to authorized companies.	
14.		TRANSPORT INFORMATION	
	14.1	UN number or ID number	Not subject to ADR regulations
	14.2	Official UN shipping name	
	14.3	Transport hazard class	
		ADR/RID/IMDG/ICAO-IATA: Class:	
		ADR/RID/IMDG/ICAO-IATA: Label:	
		ADR: Tunnel restriction code	
		IMDG - EmS:	

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	14.4	Packing group	
	14.5	Dangers for the environment	
		ADR/RID/ICAO-IATA: IMDG: Marine Contaminant:	
	14.6	Special precautions for users	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. (CE) 1272/2008 CLP and subsequent amendements	YES
		Reg. (CE) 2037/2000 "Substances that deplete the ozone layer"	NO
		Reg. (CE) 850/2004 "Persistent organic pollutants"	NO
		Reg. (CE) 689/2008 "Export and import of hazardous chemicals"	NO
		Substance listed in Annex I of Dir. 2012/18/EU cd Seveso	NO
		Directive 81/2008 Consolidated Act on protection of health and work safety	YES
		Directive 2014/103/UE "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 https://echa.europa.eu/it/substances-restricted-under-reach	NO
	15.2	Chemical safety assessment	
		A chemical safety assessment was not carried out	
16.		OTHER INFORMATION	
		Changes compared to previous edition	
		Changes to sections: 1-8-9-14-16	
		Key to abbreviations and acronyms	

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		<p>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</p>
		Main bibliographic references and data sources
		ECHA database on registered substances and those under registration: https://chem.echa.europa.eu/
		Adequate training for workers in order to ensure the protection of human health and the environment
		Training on PPE
		Training on Chemical Risk pursuant to Legislative Decree 81/08 Title IX dangerous substances