

CANON OPTRON INC.

SDS Number: EH09

Product Name: PHILICFINE HP-2

SAFETY DATA SHEET

rev. 6.5 Date of Issue 2017/4/7

Revised Date 2018/6/6

SECTION 1 Chemicals and company identification

Chemical identifier	PHILICFINE HP-2
SDS number	EH09
Company name	CANON OPTRON INC.
Address	1744-1, Kanakubo, Yuki-shi, Ibaraki-ken, 307-0015 Japan
Section name	Internal Control Promotion Div.
Telephone number	+81-296-21-3700 (Sales Dept.)
Fax number	+81-296-21-3770
Emergency telephone number	+81-296-21-3700 (Sales Dept.)
Recommended uses and restrictions on use	Vacuum deposition material

SECTION 2 Hazards identification

GHS Classification (A classification by JIS Z 7252 "classification methods such as chemical substances based on GHS")

Physicochemical hazard	Explosives	Classification not possible
	Flammable gases (including chemically unstable gases)	Not applicable
	Aerosols	Not applicable
	Oxidizing gases	Not applicable
	Gases under pressure	Not applicable
	Flammable liquids	Not applicable
	Flammable solids	Classification not possible
	Self-reactive substances and mixtures	Classification not possible
	Pyrophoric liquids	Not applicable
	Pyrophoric solids	Classification not possible
	Self-heating substances and mixtures	Classification not possible
	Substances and mixtures which, in contact with water, emit flammable gases	Classification not possible
	Oxidizing liquids	Not applicable
	Oxidizing solids	Classification not possible
	Organic peroxides	Classification not possible
	Corrosive to metals	Classification not possible
	Health hazard	Acute toxicity (oral)
Acute toxicity (dermal)		Classification not possible
Acute toxicity (inhalation)		Classification not possible
Skin corrosion/irritation		Classification not possible


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	Eye damage/eye irritation	Classification not possible
	Respiratory sensitization	Classification not possible
	Skin sensitization	Classification not possible
	Germ cell mutagenicity	Classification not possible
	Carcinogenicity	Classification not possible
	Reproductive toxicity	Classification not possible
	Effects on or via lactation	Classification not possible
	Specific target organ toxicity(single exposure)	Category 2
	Specific target organ toxicity(repeated exposure)	Category 1
	Aspiration hazard	Classification not possible
Environmental hazard	Hazard to the aquatic environment(acute hazard)	Classification not possible
	Hazard to the aquatic environment(long-term hazard)	Classification not possible
	Hazard to the ozone layer	Classification not possible
Label element		
Pictogram (Symbol)	Health Hazard	
		
Signal word	Danger	
Hazard statement	May cause damage to organs. Causes damage to organs through prolonged or repeated exposure.	
Precautionary statement		
【Safety measures】	Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.	
【First-aid measures】	If exposed or concerned: Call a poison center or doctor/physician. Get medical advice/attention if you feel unwell.	
【Storage】	Store locked up.	
【Disposal】	Dispose of contents/container in accordance with national regulations.	

SECTION 3 Composition and information ingredients

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Substance/Mixture	Mixture	
Chemical name or generic name	<i>Hydroxylapatite</i>	<i>Cerium oxide</i>
Chemical formula	<i>Ca₅(PO₄)₃(OH)</i>	<i>CeO₂</i>
CAS No.	<i>1306-06-5</i>	<i>1306-38-3</i>
Concentration or concentration range	99%<	
TSCA Inventory	<i>Hydroxylapatite (Ca₅(OH)(PO₄)₃)</i>	<i>Cerium oxide (CeO₂)</i>
EINECS number	<i>215-145-7</i>	<i>215-150-4</i>
Radioactive information	Radioactive substances are not used as the material. Therefore, there is no reason that ionizing radiation would be generated.	

SECTION 4 First-aid measures

Inhalation	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.
Skin	Remove/Take off immediately all contaminated clothing. Wash with a large amount of water and soap for 15 minutes or more. When symptoms such as blistering or pain appear, undergo a diagnosis by a physician according to the necessity.
Eye	Immediately wash your eyes with pure water for 15 minutes or more. If you are using contact lenses, remove and wash unless they are attached. Be certain to undergo a diagnosis by a physician.
Ingestion	Rinse your mouth out immediately. Be certain to undergo a diagnosis by a physician.
Protection of first aiders	Rescuers should wear protective equipment such as protective eyewear and protective gloves.

SECTION 5 Fire-fighting measures

Extinguishing media	This product itself is not flammable.
Extinguishing media are unsuitable	No data
Specific hazards	No data
Specific extinguishing methods	In the case of a fire in the periphery, the portable container is quickly moved to a safe place.
Protection of fire-fighters	Wear suitable protective equipment (gloves, glasses and a mask) in fire-fighting.

SECTION 6 Accidental release measures

Personal precautions, protective equipment, and emergency procedures	Protection equipment (specified as those in which the properties of the product are suitable) worn during operation so that airborne droplets, etc., do not adhere to the skin and dusts and gases are not absorbed.
Environmental precautions	The leakage may not directly flow into rivers or sewage.

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containment and methods and
materials for cleaning upThe leaked material is scooped up, or swept up and gathered to be recovered in
a paper bag or a drum.
After recovery, a small amount of the residue is absorbed in sediment, sawdust,
etc.Secondary disaster prevention
measures

No data

SECTION 7 Handling and storage precautions

Handling

Technical measures

After handling wearing suitable protection equipment such as protective glasses
and protective gloves, your hands and face should be thoroughly washed, and
gargling should be performed.

Safety handling precautions

Handling work must be practiced in a room where there is a local or total
ventilation facility.

Storage

Safe storage conditions

Seal and store the container in well-ventilated areas.

Safety packaging material

No data

SECTION 8 Exposure controls and personal protection

Ca₅(PO₄)₃(OH)CeO₂

Permissible concentration

ACGIH

No data

Not set

Engineering controls

Use sealed devices, equipment, or a local exhaust ventilation as much as
possible.

Personal protective equipment

Respiratory protection

Dustproof mask

Hand protection

Protective gloves

Eye protection

Dustproof glasses

Skin and body protection

Protective clothing

SECTION 9 Physical and chemical properties

Appearance

Physical state

Solid

Form

Granular

Colour

White

Odour

None

Ca₅(PO₄)₃(OH)CeO₂

pH

No findings

No data available

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Melting point/Freezing point	1614°C	2480°C
Boiling point/Initial boiling point and boiling range	No data	3730°C
Flash point	No data	No data available
Evaporation rate	No data	No data available
Flammability (solid, gas)	No data	No data available
Explosive limits		
LEL	No data	No data available
UEL	No data	No data available
Vapour pressure	No data	No data available
Vapour density (air = 1)	No data	No data available
Specific gravity (Relative density)	3.16	7.21
(Density)	*1.02 as PHILICFINE HP-2 (bulk density in granular state)	
Solubility		
Water	Insoluble	Insoluble
Other solvents	Soluble in acid	And insoluble in solvents
n-octanol/Water partition coefficient	No data	No data available
Auto-ignition temperature	No data	No data available
Decomposition temperature	No data	No data available
Viscosity (Coefficient of viscosity)	No data	No data available
Other data	None	None

SECTION 10 Stability and reactivity

	<u>Ca5(PO4)3(OH)</u>	<u>CeO2</u>
Reactivity	None in particular	No data available
Chemical stability	Stable under normal handling and storage conditions.	I is considered stable.
Hazardous reactions	No data	Do not react in the storage conditions and normal handling. I will generate NO _x gas in the reaction of chlorine gas, and nitric acid reaction with hydrochloric acid.
Conditions to avoid	No data	High-temperature and humidity
Incompatible materials	No data	Carbon dioxide, acid
Hazardous decomposition products	Hydrogen phosphide, phosphorus oxide	Acid mist is generated upon dissolution of the acid.

SECTION 11 Hazard information

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	<u>Ca₅(PO₄)₃(OH)</u>	<u>CeO₂</u>
Acute toxicity(oral)	No data	Rat LD50 value:> 5000 mg / kg bw (IUCALID (2000))
Acute toxicity(dermal)	No data	Not died in administration ((2000) IUCALID), of 2000 mg / kg bw> 2000mg/kg bw: rat LD50 value.
Acute toxicity(inhalation)	No data	It is solid in the definition of GHS: (gas) inhalation. Inhalation (vapor): No data Inhalation (dust): rat LC50 value:> 5.05 mg / L (OECD TG403) (IUCALID (2000)). In addition, I have applied the reference value of the dust from the description (IUCALID (2000)) and which accounts for 85.4% 3 micron particles.
Skin corrosion/irritation	May irritate the skin.	Test applied the test substance 0.5g to rabbit in (OECD TG404) and in another study using a rabbit without irritating 0.0 without irritating (not irritating), primary skin irritation index (not irritating) (IUCALID (2000)).
Eye damage/eye irritation	May irritate the eye.	Test applied the test substance 0.1g in the eyes of rabbits in (OECD TG405), No irritation and In another study using a rabbit (not irritating) (IUCALID (2000)), slightly irritating (slightly irritating) (IUCALID (2000)).
Respiratory sensitization/Skin sensitization	May irritate the Respiratory.	Maximization test using guinea pig sensitization reaction was not observed in induced after (OECD TG406), No sensitization (Not sensitizing.) (IUCALID (2000)).
Germ cell mutagenicity	No data	Micronucleus test using bone marrow cells by oral administration of mouse (OECD TG474) is (somatic cell in vivo mutagenicity test) negative (IUCALID (2000)). In addition, in vitro studies, the results of Emusutesuto negative (Volume 8 Ministry of the Environment Risk Assessment (2010)).
Carcinogenicity	No data	Under the risk assessment guidelines for carcinogenicity, to evaluate the carcinogenic potential in humans data are insufficient to US EPA (IRIS (2009) Tox Review).
Reproductive toxicity	No data	No data available

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Specific target organ toxicity(single exposure)	No data	In disturbance of the hair and labored breathing, the lungs of all patients in 2/10 animals; (GLP 433 OECD TG) study in 4-hour inhalation exposure concentration of 4.12 ~ 5.98 mg / L a (dust) in the rat was observed incomplete collapse accompanied by whitish lesions of diffuse (IUCLID (2000)). It should be noted that in the oral study, rather than killed in administration of 5000 mg / kg bw in rats showed normal weight gain, no abnormality seen at autopsy (IUCLID (2000)).
Specific target organ toxicity(repeated exposure)	No data	Accumulation of rare earth elements was observed in the lungs of workers has received over the years the exposure of the rare-earth element fumes such as cerium, a decrease in vital capacity and lung lesions of fibrosis granuloma, emphysema, interstitial been reported you are (Volume 8 Ministry of the Environment Risk Assessment (2010)).In addition, pulmonary obstruction and pleural thickening mild seen in the 58-year-old man after a lapse of more than 15 years at least after exposure to cerium oxide abrasive, and was referred for dyspnea, the results of the pathological examination, chronic pachypleuritis 68 rare earth pneumoconiosis that is engaged in polishing work of the optical lens ((2010) Vol. 8 Ministry of the Environment risk assessment), 35-year case you are diagnosed with, related to the exposure of cerium oxide in after '13 turnover after it was found there is a report (PATTY (5th, 2001)) of cases-year-old man.These cases are an indication of the residual long-term in the lungs of rare earth elements, reporting of adverse events to be exposure of cerium oxide is involved are many. On the other hand, in 13-week repeated inhalation test with dust exposure, expansion of the diaphragm nearly half of 5 mg/m3 or more, fading in the autopsy, changes in the bronchial lymph nodes in all cases, lung in all animals of 51mg/m3 or more rats fading, in histology, pigmentation and lymphatic tissue hyperplasia in the bronchial lymph nodes of male and female of 5 mg/m3 or more, pigmentation in the lungs, hyperplasia of alveolar epithelium in the lungs of male and female of 51 mg/m3 or more, in the pharynx pigmentation and metaplasia were observed, respectively (Volume 8 Ministry of the Environment risk Assessment (2010)).
Aspiration hazard	No data	No data available
Others	None	

SECTION 12 Ecological information

	<u>Ca5(PO4)3(OH)</u>	<u>CeO2</u>
Ecotoxicity		
Fish	No data	No data available
Crustaceantoxicity(single exposure)	No data	No data available

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Algae	No data	No data available
Other organisms	No data	No data available
Persistence and degradability	No data	No data available
Bioaccumulative potential	No data	No data available
Mobility in soil	No data	No data available
Hazard to the ozone layer	No data	No data available
Others	No data	No data available

SECTION 13 Notes on disposal

Waste from residues	Process is contracted to industrial waste disposers who received approval of a prefectural governor.
Contaminated container and contaminated packaging	The container is recycled after being cleaned, or is appropriately processed according to the standards of related laws and regulations.

SECTION 14 Transport information

	<u>Ca₅(PO₄)₃(OH)</u>	<u>CeO₂</u>
International regulation		
UN classification	N/A	Not applicable
UN number	None	None
UN proper shipping name	None	None
Packing group	N/A	Not applicable
Japanese laws and regulations	None	None
Conditions and specific safety measures of transport	No data	Requires retention of yellow card when transporting. Do not transport with food and feedstuffs. During transport, I avoid direct rays of the sun, the loading of container damage, corrosion, so that there is no leakage, it is surely the prevention of collapse of cargo. Do not top up heavy objects.

SECTION 15 Regulatory information (Japan)

	<u>Ca₅(PO₄)₃(OH)</u>	<u>CeO₂</u>
PRTR Law	None	No data available
Occupational Safety and Health Law	None	No data available
Poisonous and Deleterious Substances control Law	None	No data available
Explosives control Law	None	No data available
High-pressure gas security Law	None	No data available
Fire fighting Law	None	No data available

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Chemical substances control Law	<i>None</i>	<i>No data available</i>
Ship safety Law	<i>None</i>	<i>No data available</i>
Aviation Law	<i>None</i>	<i>No data available</i>
Prevention of marine pollution Law	<i>None</i>	<i>No data available</i>
Pneumoconiosis Law	<i>None</i>	<i>No data available</i>

Note
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

SECTION 16 Other information

The Safety Data Sheet (SDS) has been prepared based on currently available materials, information and data, and may be revised based on new information. Further, the important points in the SDS are made for the purpose of normal handling.

When handling the user product in a specialized manner, take the appropriate safety measures for the application or method.

Further, Canon Optron Inc. has paid sufficient attention to the described contents of the SDS, but does not guarantee the accuracy of its contents.

Literature Reference

[References]

Industrial Safety and Health Act All Data of MSDS Target Substances: The Chemical Daily Co., Ltd (2003)

Poisonous and Deleterious Substances Control Act All Data of MSDS Target Substances: The Chemical Daily Co., Ltd (2003)

Pollutant Release and Transfer Register All Data of MSDS Target Substances: The Chemical Daily Co., Ltd (2003)

Recommendations for Allowable Concentrations (Fiscal 2017): Japan Society for Occupational Health Journal of Occupational Health, Vol. 59 2017

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National Institute of Technology and Evaluation Homepage

Japan Advanced Information Center of Safety and Health Homepage

Ministry of Health, Labour and Welfare Homepage

[Regulatory review Tools]

ezCRIC (Japan Chemical Database Ltd)