

Material Safety Data Sheet

1. Product and company identification

Product name	ORP Check Powder for 500ml,
Name of manufacturer	Bell Science Co., Ltd
Address	3-2-5, Koyata, Iruma-city, Saitama 358-0031 Japan
Name of section	Product management division
Telephone number	+81-42-960-6686
Facsimile number	+81-42-960-6687
MSDS No.	K003

2. Composition/Information on ingredients

Substance/Mixture	Mixture
Chemical name or commercial name	Potassium hydrogen phthalate Quinhydrone is a molecular compound of hydroquinone and p-benzoquinone 1:1
Ingredients and composition	5g Potassium hydrogen phthalate Quinhydrone 48-52%(as Benzoquinone)
Chemical formula	Potassium hydrogen phthalate $C_6H_4(COOK)(COOH)$ Quinhydrone $C_6H_4(OH)_2 \cdot C_6H_4O_2$
CAS No.	Potassium hydrogen phthalate 877-24-7 Quinhydrone 106-34-3
TSCA Inventory	Registered
EINECS No.	Potassium hydrogen phthalate 2128894 Quinhydrone 2033876

3. Summary of danger and Hazard

Adverse human health hazards	The chemical is estimated to have no particular toxicity. Irritate to skin, eyes and cause inflammation. If swallowed, mouth, throat, and stomach are irritated, and cause nausea, vomiting.
Environmental effects	Harmful to aquatic organisms.
Physical and Chemical hazards	May burn when contact with fire or spark.
Class name of hazardous chemicals for SDS in Japan	Not applicable

4. First aid measures

Inhalation	Remove the victim to fresh air, and make him blow his nose and gargle.
Skin contact	Wash the affected areas under running water.

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Eye contact	Wash the affected areas under running water.
Ingestion	Give the victim water or salt water and induce vomiting. If necessary, get medical attention..
5. Fire fighting measures	
Extinguishing media	Water, dry chemical powder, carbon dioxide, dry sand, foam.
Prohibited extinguishing	None
Particular fore fighting	Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.
Protection for firefighters	Firefighters should wear protective equipment.
6. Accidental release measures	
Cautions for personnel	Wear proper equipment and avoid contact with skin and inhalation of dust. Keep away personnel except for authorized ones from spillage area by stretching ropes. If necessary, wear proper protective equipment.
Cautions for environment	Attention should be given not to cause damage to the environment by flowing of spillage to rivers. In case of the dilution of copious water, do not cause damage to the environment by untreated wastewater.
Removal measure	Sweep up the chemical and place in a chemical waste container. Absorb spill with paper or cloth.
7. Cautions of handling and storage	
Handling	
Engineering measures	If necessary, wear proper protective equipment not to contact with skin or inhale the dust Avoid contact with skin.
Cautions for safety handling	Handle the chemical not to generate aerosol or dust.
Storage	
Adequate storage condition	Keep away from oxidizing substances. Store in a dark, cool place and tightly closed.
Safety adequate container materials	Glass, polyethylene, polypropylene
8. Exposure control/Personal protection	
Engineering measures	Use only with adequate ventilation and in closed systems. Install a local ventilation system under dense vapor or dusty condition.
Control parameters	ACGIH(2002); 2mg/m3(as Hydroquinone)(TLV-TWA)
Protective equipment	
Respiration protective equipment	If necessary, wear dust mask.

Hands protective equipment Impervious protective gloves
 Eyes protective equipment Safety goggles.

9. Physical and chemical properties

Appearance	Potassium hydrogen phthalate	Powder
	Quinhydrone	Crystalline powder
Color	Potassium hydrogen phthalate	Colorless
	Quinhydrone	dark yellowish green.
Odor	Odorless	
pH	4.01 at 25°C	
Specific temperature or temperature range of physical conditions change		
Boiling point	Potassium hydrogen phthalate	Approx. 100°C
	Quinhydrone	Decomposition
Melting point	Potassium hydrogen phthalate	Approx. 0°C
	Quinhydrone	172°C
Flash point	Potassium hydrogen phthalate	Noncombustible
	Quinhydrone	165°C(as Hydroquinone)
Auto-ignition point	515°C(as Hydroquinone)	
Vapor pressure	Quinhydrone <10hP(20°C)>	
Specific gravity	Potassium hydrogen phthalate	Approx. 1g/ml(at 20°C)
	Quinhydrone	Not available
Solubility		
Solubility in solvents	Potassium hydrogen phthalate	Water: Freely soluble
		Quinhydrone
		Water; 0.4%(at 20°C)
Log Pow	log Pow ; 0.59	

10. Stability and reactivity

Stability	Stable under normal usage.
Reactivity	May react with strong oxidizing substances.
Incompatible conditions	Light, heat
Hazardous decomposition products	Carbon monoxide

11. Toxicological information

Acute toxicity	The product is thin potassium hydrogen phthalate solution and does not have particular human health hazards. If swallowed, develop a hyper sensitivity to stimulation, cause difficulty in breathing and cyanosis. (as Hydroquinone) Rat oral LD50=320mg/kg Mouse oral LD50=245mg/kg Dog oral LD50=200mg/kg
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Human oral LD₅₀=29mg/kg

Local effect

Irritation to skin, eyes If contacted with eyes, eyes are irritated.

Allergenic and sensitizing effects

Repeated and prolonged contact with skin may cause dermatitis.

Chronic and long term toxicity Not available

Carcinogenic effects Listed on neither IARC nor NTP.

Mutagenicity Not available

(as Hydroquinone)

Micronuclei: mouse(in vivo oral); Positive

Microorganism; Salmonella(+S9); Positive

Chromosome aberration; Hamster(in vitro); Positive

Teratogenic effects Not available

Effects on the reproductive system

Not available

12. Ecological information

Mobility Not available

Residuality and degradability Hydroquinone has high biodegradability.

70% by BOD

Ecotoxicity

Fish toxicity Rainbow trout LC_{50/96H}:0.64mg/l

13. Disposal consideration

Residual disposal Mixed with flammable organic solvents and burn in a chemical incinerator equipped with an afterburner and a scrubber. Or entrust approved waste disposal companies with the disposal.

Flush in drains with plenty of water after neutralizing with alkaline substances.

Containers In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

UN class Not applicable

The information contained herein is based on several references and the present state of our knowledge. However the MSDS does not always cover all information about the product, handle the product carefully.

The information is intended to ordinary usage, in case of particular handling, conduct appropriate safety measurements.

The information herein is only provision of information, and it does not represent a guarantee the properties of the product.