

Issue Date: 22<sup>nd</sup> March 2013

## 1,4 Benzoquinone Solutions

### 1. Identification of Product & Company

#### Identification of substance or preparation

1,4-Benzoquinone Solution

#### Synonyms:

*p*-Benzoquinone 1,4-Benzoquinone 1,4-Benzoquinone Benzoquinone Chinone Cyclohexadienedione  
1,4-Cyclohexadienedione 2,5-Cyclohexadiene-1,4-Dione 1,4-Dioxybenzene  
Quinone Nci-C55845  
Usaf P-220

**Product Application:** This MSDS provides health and safety information for any (unacidified) 1, 4 Benzoquinone component of the following vials or kits.

Altus Science Number	Part	Product Name/Description/Range
A-4040 (Kit), A-4043, A-4070(Kit), A-47070 (Kit), A-47075 (Kit), A-4769, A-4800 (Kit), A-47077		Total Organic Carbon (TOC) Calibration Standard, From 0.100mg/L C up to 1000 mg/L C as 1,4 Benzoquinone

#### Company/Undertaking Identification

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### 2. Composition/Information on Ingredients

Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation

Compound Name	CASRN	NIOSH RTECS	Concentration	OSHA PEL	ACGIH TLV	NIOSH REL	DFG MAK
Water	7732-18-5	ZC0110000	≥99.25%	None	None	None	None
1,4 Benzoquinone	106-51-4	DK2625000	≤0.75%	0.1	0.1	0.1	0.1

**'HAZARDOUS INGREDIENTS':** This product is not hazardous as defined by OSHA regulations.

## 3. Hazards Identification

### Emergency Overview

Pure 1,4 Benzoquinone in solid form powder is listed as a toxic material. This material is essentially a highly diluted solution. It is possible some irritation may be experienced if the material is splashed in the eyes. Chronic exposure to this material on the hands may lead to irritation and dry skin.

**ACUTE EYE EFFECTS:** Eye contact may produce notable irritation.

DOT hazard is not applicable

This product is non-combustible.

## 4. First Aid Measures

**Skin Contact:** Wash contacted skin with water.

**Eye Contact:** Eye contact may produce notable irritation. Immediately flush eyes with copious amounts of water. If irritation is not alleviated by flushing, continue treatment and seek medical advice.

**Ingestion:** Ingestion of this product may produce irritation of the mucous membranes.

## 5. Fire Fighting Measures

Flash Point	Ignition Temperature	L.E.L.	U.E.L.
Will not flash	Will not flash	Will not support an explosion	N/A

**EXTINGUISHING MEDIA AND SPECIAL FIRE FIGHTING PROCEDURES:** There are no special precautions required for fire fighting.

**General Fire/Explosion Discussion:** The material is not flammable.

## 6. Accidental Release Measures

**Protection And Spill Containment:** In the event that the product is spilled, the resulting area may be slippery. The mixture can be permitted to run to a sanitary sewer (unless restricted by local codes). The spilled liquid should be mopped up. Thoroughly rinse out any mops or rags used in this process.

**Disposal Instructions:** The waste of this material is not expected to be a RCRA waste.

## 7. Handling & Storage

**Handling:** Standard industrial ventilation should be enough to control exposures, See section 8 for PPE, wash thoroughly after handling.

**Storage:** Store in a sealed container in a well-ventilated acid storage area away from incompatible materials..

## 8. Exposure Controls/Personal Protection

**Exposure Limits:** This product is not hazardous as defined by OSHA regulations

**Engineering Controls:** Standard industrial ventilation should be adequate to control exposures.

**Personal Protective Equipment:** No special clothing is required for normal use of the product.

**Respiratory Protection:** When used according to the manufacturer's instructions, no reasonably anticipated exposure could warrant the use of respiratory protection.

**Skin Protection:** No specific hand protection noted.

**Eye Protection:** Chemical safety glasses, safety glasses with side shields, or goggles are required.

## 9. Physical & Chemical Properties

Characteristic	Description
Boiling point (°C):	Approximately 100°C @ 760 Torr
Specific gravity:	Approximately 1.0 @ 4°C
Melting point:	0°C
Estimated vapour density:	1
Estimated vapour pressure:	Approximately 18.7 mm Hg @ 21°C
Molecular weight:	Mixture
Water Solubility (%v/v):	Infinite
Photoreactive VOCs:	None
pH:	Approximately 2.5 – 3.5
Evaporation rate (Water =1):	1
Estimated % volatility:	Greater than 99%
Odour threshold:	0.11ppm quinone (greater than exposure)
Odour:	Slight Chlorine odor
Appearance:	Clear colourless liquid

## 10. Stability & Reactivity

**Stability:** Stable under normal storage conditions.

**Hazardous Polymerization:** Will not occur.

**Incompatibilities:** Should be stored away from products which are incompatible with.

**Decomposition Products:** No significant

## 11. Toxicological Information

**CANCER HAZARD:** None of the primary constituents are known to be carcinogenic.

**REPRODUCTIVE HAZARD:** None of the constituents of the product have been reported to cause birth defects.

Organization	Rating	Description of Carcinogenic Rating
EPA	None	Not Listed
NTP	None	Not Listed
IARC	IARC-3	Not Classifiable as a human carcinogen
OSHA	None	Not Listed
ACGIH	A4	Not Listed
NIOSH	None	Not Listed
DFG MAK	None	Lack of conclusive data
California Prop, 65	None	Not Listed

The actual employee exposure can be determined by using the NIOSH S181 Method (XAD-2 collection method).

## 12. Ecological Information

**Aquatic Toxicology:** No Data Available.

**Biodegradation:** No Data Available.

## 13. Disposal Considerations

WASTE DISPOSAL: The waste of this material is not expected to be a RCRA waste.

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is: Not applicable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

## 14 Transport Information

**SHIPPING NAME:** None

**HAZARD CLASS:** Not Applicable

**UN NUMBER:** None

## 15 Regulatory Information

TSCA: All of the constituents found in the product are on the TSCA inventory.

### U.S. Environmental Regulations:

**Water Pollution Control Act:** Not determined.

**Resource Conservation and Recovery Act:** If these products were discarded as purchased, it is believed that the material would not be a RCRA waste.

Regulation	Applicable
§ 261.21 Ignitability	NO
§ 261.22 Corrosivity	NO
§ 261.23 Reactivity	NO
§ 261.24 Toxicity	NO
F CODES	NO
K CODES	NO
P CODES	NO
U CODES	U197

### Community Right to Know (SARA III):

Regulation	Applicable
Spill Reportable Quantity (§302)	NO
SECTION 311 (§370)	NO
SECTION 312 (§370)	NO
SECTION 313 (§372.65)	NO
EXTREMELY HAZARDOUS LIST (§355)	NO
REPORTING THRESHOLD	10 LBS

### State Regulations:

This MSDS has been prepared to comply with the provisions found in the Federal Department of Labour OSHA Hazard Communication Standard. Several states, most notably CA, PA, NJ and MA have independently promulgated regulations pertaining to MSDS. Altus Science has not specifically determined if this MSDS is in compliance with the provisions of those states.

**CALIFORNIA PROPOSITION 65:** No data.

**NEW JERSEY:** This MSDS has not been prepared specifically to comply with the state of New Jersey regulations and may or may not contain compounds present as such levels which could require reporting.

**PENNSYLVANIA:** This MSDS has not been prepared specifically to comply with the Pennsylvania Right-to-Know regulation and may or may not contain compounds present as such levels which could require reporting.

Regulation	Applicable
Spill Reportable Quantity (§302)	NO
SECTION 311 (§370)	NO
SECTION 312 (§370)	NO
SECTION 313 (§372.65)	NO
EXTREMELY HAZARDOUS LIST (§355)	NO
REPORTING THRESHOLD	5,000 LBS

**CANADIAN REGULATIONS:**

WHMIS Classification: Not determined

**EUROPEAN REGULATIONS:**

EC Classification (Calculated): Not determined

## 16. Other Information

**NFPA/HMIS**

Health	1
Fire	0
Reactivity	0
Special Reactivity	None
(1) Protective Equipment A	

**Code Translation**

Can cause irritation if not treated.  
 Will not burn  
 Normally stable. Not reactive with water.  
 No Special Hazard  
 Safety Glasses

(1) Refer to section 8 of MSDS for additional protective equipment recommendations.