

## Safety Data Sheet

### Section 1. Identification

**Product name** : EnBrite™ QUASAR ENS-CM  
**Product code** : 425912  
**Uses advised against** : Consumer, private households, general public  
**Product type** : Liquid.  
**Validation date** : 1/23/2014.

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### Section 2. Hazards identification

**Classification of the substance or mixture** : ACUTE TOXICITY: ORAL - Category 4  
 SKIN CORROSION/IRRITATION - Category 1B  
 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
 RESPIRATORY SENSITIZATION - Category 1  
 SKIN SENSITIZATION - Category 1  
 GERM CELL MUTAGENICITY - Category 2  
 CARCINOGENICITY - Category 1A

## Section 2. Hazards identification

TOXIC TO REPRODUCTION [Unborn child] - Category 1A  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1  
AQUATIC TOXICITY (ACUTE) - Category 2  
AQUATIC TOXICITY (CHRONIC) - Category 2

### GHS label elements

#### Symbol

:



#### Signal word

: Danger

#### Hazard statements

: Harmful if swallowed.  
Causes severe skin burns and eye damage.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause an allergic skin reaction.  
May cause cancer.  
May damage the unborn child.  
Suspected of causing genetic defects.  
Causes damage to organs through prolonged or repeated exposure.  
Toxic to aquatic life with long lasting effects.

#### Precautionary statements

##### Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust or mist. Wash thoroughly after handling. Use personal protective equipment as required. Wear protective gloves. Wear protective clothing. Wear eye/face protection. In case of inadequate ventilation wear respiratory protection. Avoid release to the environment. Keep out of reach of children. Do not eat, drink or smoke when using this product. Do not breathe the vapor. Contaminated work clothing should not be allowed out of the workplace. If medical advice is needed, have product container or label at hand.

##### Response

: Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of soap and water. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: Call a POISON CENTER or doctor/physician if you feel unwell. Get medical attention/advice. If experiencing respiratory symptoms call a POISON CENTER or doctor/physician. Collect spillage.

##### Storage

: Store locked up.

##### Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

#### Other hazards which do not result in classification

: Not available.

### Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

Ingredient name	%	CAS number
Nickel Compound	10-20	-
Ammonium Hydroxide	1-10	1336-21-6
lead	0.01-0.1	7439-92-1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in section 8.

### Section 4. First aid measures

#### Description of necessary first aid measures

- Inhalation** : Sensitizer to lungs. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. In the event of any complaints or symptoms, avoid further exposure. Get medical attention immediately. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Move exposed person to fresh air. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Keep person warm and at rest. If unconscious, place in recovery position and get medical attention immediately. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Ingestion** : Get medical attention immediately. Chemical burns must be treated promptly by a physician. Move exposed person to fresh air. Wash out mouth with water. Keep person warm and at rest. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Remove dentures if any. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Never give anything by mouth to an unconscious person. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.
- Skin contact** : Get medical attention immediately. Chemical burns must be treated promptly by a physician. Provide a readily-accessible eyewash facility and quick-drench safety shower. In case of contact, immediately flush skin with plenty of water for at least 30 minutes while removing contaminated clothing and shoes. Continue to rinse for at least 15 minutes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Remove contaminated clothing and shoes. Sensitizer to skin. Sensitization may result in dermatitis. In the event of any complaints or symptoms, avoid further exposure. Wash contaminated clothing before reuse. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Get medical attention immediately. Chemical burns must be treated promptly by a physician. Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open.

#### Over-exposure signs/symptoms

See section 11 for more detailed information on health effects and symptoms.

#### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

## Section 4. First aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Personnel should wear protective clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
nitrogen oxides  
sulfur oxides  
metal oxide/oxides
- Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Remark** : Not available.

## Section 6. Accidental release measures

- Personal precautions, protective equipment and emergency procedures** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.
- Methods and materials for containment and cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

## Section 7. Handling and storage

- Precautions for safe handling** : Avoid exposure - obtain special instructions before use. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Put on appropriate personal protective equipment (see section 8). Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. May cause sensitization by inhalation. Skin sensitizer. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure during pregnancy. Do not breathe vapor or mist. Do not ingest. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Be sure area is equipped with all necessary emergency equipment including fire extinguishers, and spill response materials. Empty containers retain product residue and can be hazardous. Do not reuse product container. Avoid release to the environment.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

Ingredient name	Exposure limits
Nickel Compound	<b>ACGIH TLV (United States, 3/2012). Notes: as Ni</b> TWA: 0.1 mg/m <sup>3</sup> , (as Ni) 8 hour(s). Form: Inhalable fraction
lead	<b>ACGIH TLV (United States, 2005). Notes: As Nickel</b> TWA: 0.1 mg/m <sup>3</sup> 8 hour(s). Form: Soluble <b>ACGIH TLV (United States, 3/2012). Notes: as Pb</b> TWA: 0.05 mg/m <sup>3</sup> , (as Pb) 8 hour(s).

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.

## Section 8. Exposure controls/personal protection

- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.
- Eye protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Avoid contact with eyes. Use safety eyewear designed to protect against splash of liquids.
- Skin protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Avoid contact with skin and clothing. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

## Section 9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : >100°C (>212°F)
- Flash point** : Not available.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 1.06 to 1.1
- Solubility** : Soluble in the following materials: cold water and hot water.
- Octanol/water partition coefficient** : Not available.
- Decomposition temperature** : Not available.
- Auto-ignition temperature** : Not available.
- Viscosity** : Not available.

## Section 10. Stability and reactivity

- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Avoid release to the environment.
- Incompatibility with various substances** : avoid Excessive heat
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological information

- Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.
- Potential health effects**
- Inhalation** : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. Adverse symptoms may include the following: respiratory tract irritation coughing Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. May cause cancer if inhaled. Risk of cancer depends on duration and level of exposure. May cause damage to organs through prolonged or repeated exposure if inhaled.
- Ingestion** : Harmful if swallowed. May cause burns to mouth, throat and stomach. May cause cancer if swallowed. Risk of cancer depends on duration and level of exposure. May cause damage to organs through prolonged or repeated exposure if swallowed.
- Skin** : Causes severe burns. Skin Sensitizer: May cause an allergic skin reaction.
- Eyes** : Causes serious eye damage. Direct contact with the eyes can cause irreversible damage, including blindness.
- Chronic toxicity**
- Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : Contains material which can cause heritable genetic effects.
- Teratogenicity** : May damage the unborn child.
- Fertility effects** : May damage fertility or the unborn child.

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Nickel Compound lead	Category 1 Category 1	Not determined Oral	Not determined cardiovascular system, central nervous system (CNS), immune system, kidneys and peripheral nervous system

### Numerical measures of toxicity

#### Acute toxicity estimates

## Section 11. Toxicological information

Route	ATE value
Oral	588 mg/kg

Product/ingredient name	Result	Species	Dose	Exposure
Nickel Compound Ammonium Hydroxide	LDLo Oral	Mouse	250 mg/kg	-
	LC50 Inhalation Vapor	Rat	2000 ppm	4 hours
	LD50 Oral	Rat	350 mg/kg	-

### Additional information: Mutagenicity

Product/ingredient name	Test	Experiment	Result
lead	-	Mammalian-Animal	Equivocal

### Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
lead	Equivocal - Oral	Mammal - species unspecified	2118 mg/kg	-
	Equivocal - Inhalation	Rat	10 mg/m <sup>3</sup>	24 hours per day

### Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
lead	-	-	Equivocal	Rat - Female	Oral: 520 mg/kg	-
	-	-	Equivocal	Rat - Female	Inhalation: 3 mg/m <sup>3</sup>	24 hours per day
	Equivocal	-	-	Mouse - Female	Oral: 300 mg/kg	-
	-	Equivocal	-	Mouse	Oral: 4099.2 mg/kg	-

## Section 12. Ecological information

**Ecotoxicity** : This material is toxic to aquatic life with long lasting effects.

### Aquatic and terrestrial toxicity

Product/ingredient name	Test	Result		
Ammonium Hydroxide	-	Acute LC50 0.44 mg/L	Fish	96 hours
	-	Acute LC50 0.66 mg/L	Fish	96 hours
	-	Acute LC50 1.17 mg/L	Fish	96 hours
	-	Acute LC50 71.1 mg/L	Fish	96 hours
	-	Acute LC50 74.2 mg/L	Fish	96 hours
	-	Acute LC50	Fish	96 hours
	-	128.2 mg/L	Fish	96 hours
lead	-	Acute EC50 105 ppb Marine water	Algae - Diatom - Chaetoceros sp. - Exponential	72 hours

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## Section 12. Ecological information

-	Acute EC50 0.489 mg/L Marine water	growth phase Algae - Green algae - Ulva pertusa	96 hours
-	Acute EC50 8000 ug/L Fresh water	Aquatic plants - Duckweed - Lemna minor	4 days
-	Acute LC50 530 ug/L Fresh water	Crustaceans - Water flea - Ceriodaphnia reticulata - <4 hours	48 hours
-	Acute LC50 4400 to 5300 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
-	Acute LC50 0.44 ppm Fresh water	Fish - common carp - Cyprinus carpio - Juvenile (Fledgling, Hatchling, Weanling) - 3.5 cm	96 hours
-	Chronic NOEC 0.03 ug/L Fresh water	Fish - common carp - Cyprinus carpio - 13 months - 10.5 cm - 27.8 g	4 weeks

**Conclusion/Summary** : Not available.

### Persistence/degradability

Product/ingredient name	Test	Result
Not available.		

**Conclusion/Summary** : Not available.

Product/ingredient name	Aquatic half-life	Photolysis
Not available.		

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF
Not available.		





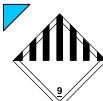

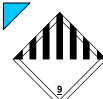

**Mobility** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG* Label	Additional information
<b>DOT Classification</b>	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nickel Compound). Marine pollutant	9	III  	ERG#171 Marine pollutant
<b>IMDG Class</b>	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nickel Compound). Marine pollutant (Nickel Compound, Ammonium Hydroxide)	9	III  	Marine pollutant
<b>IATA-DGR Class</b>	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nickel Compound)	9	III  	-
<b>UN Class</b>	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Nickel Compound)	9	III  	-

PG\* : Packing group

## Section 15. Regulatory information

### China

#### [List of Toxic Chemicals Severely Restricted for Importing & Exporting by China](#)

None of the components are listed.

### Korea

#### a. [Regulation according to ISHA](#)

**ISHA Article 37** : The following components are listed: Lead and its mixture containing more than 0.06%

**ISHA Article 38** : None of the components are listed.

#### b. [Regulation according to TCCA](#)

**TCCA Toxic chemicals** : Not applicable

**TCCA Observational chemicals** : None of the components are listed.

**TCCA Article 32 (Banned)** : None of the components are listed.

**TCCA Article 32 (Restricted)** : The following components are listed: Lead and its mixture containing more than 0.06%

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## Section 15. Regulatory information

c. **Dangerous Materials Control Act** : Not available.

### Europe

**Safety, health and environmental regulations specific for the product** : No known specific national and/or regional regulations applicable to this product (including its ingredients).

### Japan

### Poisonous and Deleterious Substances

<b>Ingredient name</b>	<b>Status</b>
None of the components are listed.	

### ISHL

**ISHL Class** : Class 2

**Working Conditions Act; Health and Safety Act** : Article 57.

**Law Concerning Prevention of Pollution of the Ocean and Maritime Disaster** : Marine pollutant: P

**ISHL Prevention of Tetraalkyl Lead Poisoning** : Not listed

**ISHL Harmful Substances Subject to Obtaining Permission for Manufacturing** : Not listed

**ISHL Harmful Substances, Prohibited for Manufacturing** : Not listed

**ISHL Chemicals requiring notification** : Listed

**ISHL Dangerous Substances** : Not listed

**List of Specially Controlled Industrial Waste** : Not listed

**Pollutant Release and Transfer Registers (PRTR)** : Specified Class 1

**Fire Service Law - Obstructive materials** : Not listed

### Taiwan

**List of chemicals reputed to be a "threat of imminent danger"** : This product contains substances considered to be a "Threat of imminent danger": Ammonium Hydroxide, lead.

**LSHL Article 21** : This product contains substances listed on "LSHL Article 21": lead.

### International lists

**United States TSCA** : **TSCA 5(a)2 proposed significant new use rules**: No products were found.  
**TSCA 5(a)2 final significant new use rules**: No products were found.  
**TSCA 12(b) one-time export**: lead

**TSCA 12(b) annual export notification**: lead  
Refer to Proposed Rule (59 Federal Register 11122, March 9, 1994 ) for details on TSCA 12(b) applicability for lead.

## **Section 15. Regulatory information**

**United States inventory (TSCA 8b)** : All components are listed or exempted.

## **Section 16. Other information**

### History

**Validation date** : **1/23/2014.**  
**Supersedes Date** : 3/27/2013.  
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### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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