# SAFETY DATA SHEET

**HCS-2012 APPENDIX D TO §1910.1200**

**Version** 1 **Issue Date** 10-Mar-2015
**Product Name** ALKALINE BATTERY - LR03 **Revision date** 10-Mar-2015

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**Product identifier**

| | |
|---|---|
| Product Name | ALKALINE BATTERY - LR03 |
| Chemical Name | ALKALINE BATTERY |

**Other means of identification**

| | |
|---|---|
| Product Code | LR03 1.5V 1000mAh |

**Recommended use of the chemical and restrictions on use**

| | |
|---|---|
| Recommended Use | Power supply |
| Uses advised against | No information available |

**Details of the supplier of the safety data sheet**

| | |
|---|---|
| Supplier | SUZHOU XINLVZHOU ELECTRONICS CO., LTD |
| Address | Yangcheng Lake West Road, No777, Xiangcheng District, SuZhou City, Jiangsu Province, China. |
| Postal Code | - |
| Phone | +86-512-68702665 |
| FAX | +86-512-68669435 |
| E-mail | qky006@lvzhoudianzi.com.cn |

**Emergency telephone number**

+86-512-68702665

## 2. HAZARDS IDENTIFICATION

**GHS Classification**

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

**Label elements**

| | |
|---|---|
| Symbols/Pictograms | None |
| Signal word | None |
| Hazard Statements | None |
| Precautionary Statements | |
| Prevention | None |
| Response | None |
| Storage | None |
| Disposal | None |

**Hazards not otherwise classified (HNOC)**

No information available

**Unknown acute toxicity**

.?% of the mixture consists of ingredient(s) of unknown toxicity

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical nature** Mixture

| Chemical Name | CAS No | Weight-% |
|---|---|---|

| | | |
|---|---|---|
| Manganese dioxide | 1313-13-9 | 15 - 40 |
| Zinc | 7440-66-6 | 15 - 40 |
| Steel | 12597-69-2 | 10 - 30 |
| Zinc oxide | 1314-13-2 | 3 - 7 |
| Graphite | 7782-42-5 | 1 - 5 |
| Copper | 7440-50-8 | 1 - 5 |
| Acrylic resin | 9003-01-4 | 0.1 - 1 |
| Water | 7732-18-5 | 0.1 - 1 |
| Potassium hydroxide | 1310-58-3 | 0.1 - 1 |
| Polypropylene | 9003-07-0 | 0.1 - 1 |
| Calcium stearate | 1592-23-0 | 0.1 - 1 |
| Indium hydroxide (In(OH)3) | 20661-21-6 | 0.1 - 1 |

## 4. FIRST AID MEASURES

**Description of first aid measures**

General advice — Remove contaminated clothing and shoes. If symptoms persist, call a physician.

Inhalation — Not an expected route of exposure. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Skin Contact — Wash hands thoroughly after handling. .

Eye contact — Not an expected route of exposure. .

Ingestion — Rinse mouth Get medical attention Never give anything by mouth to an unconscious person

**Most important symptoms and effects, both acute and delayed**

No information available.

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Extinguishing media**

Suitable extinguishing media — Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media — No information available.

**Specific hazards arising from the chemical**

Thermal decomposition can lead to release of irritating and toxic gases and vapors

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

Evacuate personnel to safe areas
Ensure adequate ventilation, especially in confined areas
Remove all sources of ignition
Use personal protection recommended in Section 8

**Methods and material for containment and cleaning up**

Prevent further leakage or spillage if safe to do so
Pick up and transfer to properly labeled containers

Avoid release to the environment

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

Handle in accordance with good industrial hygiene and safety practice
Ensure adequate ventilation, especially in confined areas
Avoid creating dust
Avoid contact with eyes
Wash thoroughly after handling
Use personal protection recommended in Section 8

**Conditions for safe storage, including any incompatibilities**

Keep containers tightly closed in a dry, cool and well-ventilated place
Keep away from heat

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Exposure Limits**

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH | Denmark | European Union |
|---|---|---|---|---|---|
| Manganese dioxide (CAS #: 1313-13-9) | TWA: 0.02 mg/m$^3$ Mn<br>TWA: 0.1 mg/m$^3$ Mn | (vacated) Ceiling: 5 mg/m$^3$<br>Ceiling: 5 mg/m$^3$ Mn | IDLH: 500 mg/m$^3$ Mn<br>TWA: 1 mg/m$^3$ Mn<br>STEL: 3 mg/m$^3$ Mn | TWA: 0.2 mg/m$^3$ | - |
| Zinc oxide (CAS #: 1314-13-2) | STEL: 10 mg/m$^3$ respirable fraction<br>TWA: 2 mg/m$^3$ respirable fraction | TWA: 5 mg/m$^3$ fume<br>TWA: 15 mg/m$^3$ total dust<br>TWA: 5 mg/m$^3$ respirable fraction<br>(vacated) TWA: 5 mg/m$^3$ fume<br>(vacated) TWA: 10 mg/m$^3$ total dust<br>(vacated) TWA: 5 mg/m$^3$ respirable fraction<br>(vacated) STEL: 10 mg/m$^3$ fume | IDLH: 500 mg/m$^3$<br>Ceiling: 15 mg/m$^3$ dust<br>TWA: 5 mg/m$^3$ dust and fume<br>STEL: 10 mg/m$^3$ fume | TWA: 4 mg/m$^3$ | - |
| Graphite (CAS #: 7782-42-5) | TWA: 2 mg/m$^3$ respirable fraction all forms except graphite fibers | - | - | TWA: 2.5 mg/m$^3$ | - |
| Copper (CAS #: 7440-50-8) | TWA: 0.2 mg/m$^3$ fume TWA: 1 mg/m$^3$ Cu dust and mist | - | - | TWA: 1.0 mg/m$^3$<br>TWA: 0.1 mg/m$^3$ | - |
| Potassium hydroxide (CAS #: 1310-58-3) | Ceiling: 2 mg/m$^3$ | (vacated) Ceiling: 2 mg/m$^3$ | Ceiling: 2 mg/m$^3$ | Ceiling: 2 mg/m$^3$ | - |
| Calcium stearate (CAS #: 1592-23-0) | TWA: 10 mg/m$^3$ except stearates of toxic metals | - | - | - | - |
| Indium hydroxide (In(OH)3) (CAS #: 20661-21-6) | TWA: 0.1 mg/m$^3$ In | - | - | TWA: 0.1 mg/m$^3$ | - |

| Chemical Name | Latvia | France | Finland | Germany | Italy |
|---|---|---|---|---|---|
| Manganese dioxide (CAS #: 1313-13-9) | TWA: 0.3 mg/m$^3$ | - | TWA: 0.2 mg/m$^3$<br>TWA: 0.1 mg/m$^3$ | TWA: 0.2 mg/m$^3$<br>TWA: 0.02 mg/m$^3$<br>Ceiling / Peak: 1.6 mg/m$^3$<br>Ceiling / Peak: 0.16 mg/m$^3$<br>TWA: 0.5 mg/m$^3$ | - |

| | | | | | |
|---|---|---|---|---|---|
| Zinc (CAS #: 7440-66-6) | | - | - | TWA: 0.1 mg/m$^3$<br>TWA: 2 mg/m$^3$<br>Ceiling / Peak: 0.4 mg/m$^3$<br>Ceiling / Peak: 4 mg/m$^3$ | - |
| Zinc oxide (CAS #: 1314-13-2) | TWA: 0.5 mg/m$^3$ | TWA: 5 mg/m$^3$<br>TWA: 10 mg/m$^3$ | TWA: 2 mg/m$^3$<br>STEL: 10 mg/m$^3$ | TWA: 1 mg/m$^3$ TWA: 0.1 mg/m$^3$<br>TWA: 2 mg/m$^3$<br>Ceiling / Peak: 1 mg/m$^3$ Ceiling / Peak: 0.4 mg/m$^3$<br>Ceiling / Peak: 4 mg/m$^3$ | - |
| Potassium hydroxide (CAS #: 1310-58-3) | - | STEL: 2 mg/m$^3$ | STEL: 2 mg/m$^3$<br>Ceiling: 2 mg/m$^3$ | - | - |

| Chemical Name | Poland | Portugal | Spain | Switzerland | Netherlands |
|---|---|---|---|---|---|
| Manganese dioxide (CAS #: 1313-13-9) | TWA: 0.3 mg/m$^3$ | TWA: 0.2 mg/m$^3$ | TWA: 0.2 mg/m$^3$ | TWA: 0.5 mg/m$^3$ | - |
| Zinc oxide (CAS #: 1314-13-2) | STEL: 10 mg/m$^3$<br>TWA: 5 mg/m$^3$ | STEL: 10 mg/m$^3$<br>TWA: 2 mg/m$^3$ | STEL: 10 mg/m$^3$<br>TWA: 2 mg/m$^3$ | STEL: 3 mg/m$^3$<br>TWA: 3 mg/m$^3$ | - |
| Potassium hydroxide (CAS #: 1310-58-3) | STEL: 1 mg/m$^3$<br>TWA: 0.5 mg/m$^3$ | Ceiling: 2 mg/m$^3$ | STEL: 2 mg/m$^3$ | TWA: 2 mg/m$^3$ | - |
| Calcium stearate (CAS #: 1592-23-0) | - | TWA: 10 mg/m$^3$ | TWA: 10 mg/m$^3$ | - | - |

| Chemical Name | Norway | United Kingdom | Australia | Austria | Belgium |
|---|---|---|---|---|---|
| Manganese dioxide (CAS #: 1313-13-9) | TWA: 1 mg/m$^3$<br>TWA: 0.1 mg/m$^3$<br>STEL: 3 ppm<br>STEL: 0.3 mg/m$^3$ | TWA: 0.5 mg/m$^3$ | 1 mg/m$^3$ | STEL 2 mg/m$^3$<br>TWA: 0.5 mg/m$^3$ | - |
| Zinc oxide (CAS #: 1314-13-2) | TWA: 5 mg/m$^3$<br>STEL: 10 mg/m$^3$ | - | 10 mg/m$^3$<br>5 mg/m$^3$<br>10 mg/m$^3$ STEL | TWA: 5 mg/m$^3$ | - |
| Graphite (CAS #: 7782-42-5) | - | - | 3 mg/m$^3$ | STEL 10 mg/m$^3$<br>TWA: 5 mg/m$^3$ | - |
| Copper (CAS #: 7440-50-8) | - | - | 1 mg/m$^3$<br>0.2 mg/m$^3$ | STEL 4 mg/m$^3$<br>STEL 0.4 mg/m$^3$<br>TWA: 1 mg/m$^3$<br>TWA: 0.1 mg/m$^3$ | - |
| Potassium hydroxide (CAS #: 1310-58-3) | Ceiling: 2 mg/m$^3$ | STEL: 2 mg/m$^3$ | 2 mg/m$^3$ Peak | TWA: 2 mg/m$^3$ | - |
| Calcium stearate (CAS #: 1592-23-0) | - | - | 10 mg/m$^3$ | - | - |
| Indium hydroxide (In(OH)3) (CAS #: 20661-21-6) | - | - | 0.1 mg/m$^3$ | STEL 0.2 mg/m$^3$<br>TWA: 0.1 mg/m$^3$ | - |

**Appropriate engineering controls**

Showers
Eyewash stations
Ventilation systems

**Individual protection measures, such as personal protective equipment**

| | |
|---|---|
| Respiratory protection | If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. |
| Hand Protection | Wear protective gloves. |
| Eye/face protection | No special technical protective measures are necessary. |
| Skin and body protection | Wear suitable protective clothing. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

| | |
|---|---|
| **Appearance** | Solid |
| **Color** | metallic |
| **Odor** | Odorless |
| **Odor Threshold** | Not determined |
| **pH** | Not determined |
| **Melting point/freezing point** | Not determined |
| **Boiling point / boiling range** | Not determined |
| **Flash point** | Not applicable |
| **Evaporation rate** | Not determined |
| **Flammability (solid, gas)** | Not determined |
| **Flammability Limit in Air** | Not determined |
| **Vapor Pressure** | Not applicable |
| **Vapor density** | Not determined |
| **Density** | Not determined |
| **Relative density** | Not determined |
| **Bulk density** | Not determined |
| **Specific gravity** | Not determined |
| **Water solubility** | Not determined |
| **Partition coefficient (LogPow)** | Not determined |
| **Autoignition temperature** | Not determined |
| **Decomposition temperature** | Not determined |
| **Kinematic viscosity** | Not determined |
| **Dynamic viscosity** | Not determined |
| **Explosive properties** | Not an explosive |
| **Oxidizing properties** | Not determined |

**Other information**

No information available

## 10. STABILITY AND REACTIVITY

**Reactivity**

Stable under recommended storage and handling conditions (see SECTION 7, handling and storage).

**Chemical stability**

Stable under normal conditions

**Possibility of Hazardous Reactions**

None under normal processing

**Conditions to avoid**

Strong heating. Incompatible materials

**Incompatible materials**

Strong acids Strong bases Strong oxidizing agents

**Hazardous Decomposition Products**

None known based on information supplied

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

| | |
|---|---|
| Inhalation | Inhalation of vapors in high concentration may cause irritation of respiratory system |
| Eye contact | Contact with eyes may cause irritation |
| Skin Contact | Substance may cause slight skin irritation |
| | Ingestion may cause irritation to mucous membranes |

## Information on toxicological effects

### Acute toxicity

| Chemical Name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Manganese dioxide (CAS #: 1313-13-9) | = 9000 mg/kg ( Rat ) | - | - |
| Zinc oxide (CAS #: 1314-13-2) | > 5000 mg/kg ( Rat ) | - | - |
| Copper (CAS #: 7440-50-8) | > 2500 mg/kg bw(rat) | > 2000 mg/kg bw(rat) | =1.03 mg/L/4 h(rat) |
| Acrylic resin (CAS #: 9003-01-4) | 10250 mg/kg (rat, carbomer 910)<br>4100 mg/kg (rat, carbomer 943) | 3 g/kg (rat, carbomer 910) | 1.71 mg/L (rat) |
| Potassium hydroxide (CAS #: 1310-58-3) | = 333 mg/kg (Rat) | - | - |
| Calcium stearate (CAS #: 1592-23-0) | > 10 g/kg ( Rat ) | - | - |
| Polypropylene (CAS #: 9003-07-0) | >5 g/kg | - | - |

**Skin corrosion/irritation**
Non-irritating to the skin

**Serious eye damage/eye irritation**
No eye irritation

**Sensitization**
No information available

**Germ cell mutagenicity**
No information available

**Carcinogenicity**
No information available

**Reproductive toxicity**
No information available

**STOT - single exposure**
No information available

**STOT - repeated exposure**
No information available

**Aspiration hazard**
No information available

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

| Chemical Name | Algae/aquatic plants EC50 | Fish LC50 | Crustacea EC50 |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Zinc (CAS #: 7440-66-6) | 0.11 - 0.271 mg/L/96h Pseudokirchneriella subcapitata static<br>0.09 - 0.125 mg/L/72h Pseudokirchneriella subcapitata static | 2.16 - 3.05 mg/L/96h Pimephales promelas flow-through<br>0.211 - 0.269 mg/L/96h Pimephales promelas semi-static<br>2.66: mg/L/96h Pimephales promelas static<br>30 mg/L/96h Cyprinus carpio<br>0.45 mg/L/96h Cyprinus carpio semi-static<br>7.8 mg/L/96h Cyprinus carpio static<br>3.5 mg/L/96h Lepomis macrochirus static<br>0.24 mg/L/96h Oncorhynchus mykiss flow-through<br>0.59 mg/L/96h Oncorhynchus mykiss semi-static<br>0.41 mg/L/96h Oncorhynchus mykiss static | 0.139 - 0.908 mg/L/48h Daphnia magna Static |
| Zinc oxide (CAS #: 1314-13-2) | - | 1.1 mg/l/96h | 0.098 mg/l/48h Daphnia magna |
| Copper (CAS #: 7440-50-8) | 0.031 - 0.054 mg/L/96h Pseudokirchneriella subcapitata static<br>0.0426 - 0.0535 mg/L/72h Pseudokirchneriella subcapitata static | - | - |
| Potassium hydroxide (CAS #: 1310-58-3) | - | 80mg/L/96h Gambusia affinis static | - |

**Persistence and degradability**

No information available

**Bioaccumulative potential**

| Chemical Name | Partition coefficient (LogPow) |
|---|---|
| Manganese dioxide (CAS #: 1313-13-9) | <0 |

**Mobility in soil**

No information available

**Other adverse effects**

No information available

## 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

Disposal of wastes: Disposal should be in accordance with applicable regional, national and local laws and regulations

Contaminated packaging: Dispose of in accordance with federal, state and local regulations

This product contains one or more substances that are listed with the State of California as a hazardous waste.

| Chemical Name | California Hazardous Waste Status |
|---|---|
| Zinc<br>7440-66-6 | Ignitable powder Toxic |
| Zinc oxide<br>1314-13-2 | Toxic |
| Copper<br>7440-50-8 | Toxic |
| Potassium hydroxide<br>1310-58-3 | Toxic<br>Corrosive |

| | |
|---|---|
| Indium hydroxide (In(OH)3)<br>20661-21-6 | Toxic |

## 14. TRANSPORT INFORMATION

The batteries are considered to be "Dry cell" batteries and are unregulated for purpose of transportation by the U.S. DOT, ICAO, IATA and IMDG. The only DOT requirement for shipping these batteries is special provision 130 which states : " Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat ( For example, by the effective insulation of exposed terminals). The only requirement for shipping these batteries by ICAO and IATA is Special Provision A123 which states: " An electrical battery or battery powered device having the potential of dangerous evolutions of heat that is not prepared so as to prevent a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or in the case of equipment, by disconnection of the battery and protection of exposed terminals) is forbidden from transportation." The international Maritime Dangerous Goods Code (IMDG) regulate them for ocean transportation under Special Provision 304 which says : Batteries, dry , containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject to the provision of this Code provided the batteries are securely packed and protected against short-circuits. Example of such batteries are : alkali-manganese, zinc carbon, nickel metal hydride and nickel-cadmium batteries. Such battery have been packed in inner packaging in such a manner as to effectively prevent short circuit and movement that could lead to short-circuit.

**DOT / IMDG / IATA**

| | |
|---|---|
| **UN/ID No.** | Not regulated |
| **Proper shipping name** | Not regulated |
| **Hazard Class** | Not regulated |
| **Packing Group** | Not regulated |
| **Special precautions** | No information available |
| **Marine pollutant** | Not applicable |
| **UN/ID No.** | Not Regulated |
| **UN/ID No.** | Not Regulated |
| **UN/ID No.** | Not Regulated |

## 15. REGULATORY INFORMATION

**International Inventories**

| Component | AICS | DSL/NDSL | EINECS/ELINCS | ENCS | IECSC | KECL | PICCS | TSCA |
|---|---|---|---|---|---|---|---|---|
| Manganese dioxide 1313-13-9 ( 15 - 40 ) | X | X | X | X | X | X | X | X |
| Zinc 7440-66-6 ( 15 - 40 ) | X | X | X | - | X | X | X | X |
| Zinc oxide 1314-13-2 ( 3 - 7 ) | X | X | X | X | X | X | X | X |
| Graphite 7782-42-5 ( 1 - 5 ) | X | X | X | - | X | X | X | X |
| Copper 7440-50-8 ( 1 - 5 ) | X | X | X | - | X | X | X | X |
| Acrylic resin 9003-01-4 ( 0.1 - 1 ) | X | X | - | X | X | X | X | X |
| Water 7732-18-5 ( 0.1 - 1 ) | X | X | X | - | X | X | X | X |
| Potassium hydroxide 1310-58-3 ( 0.1 - 1 ) | X | X | X | X | X | X | X | X |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Polypropylene 9003-07-0 ( 0.1 - 1 ) | X | X | - | X | X | X | X | X |
| Calcium stearate 1592-23-0 ( 0.1 - 1 ) | X | X | X | X | X | X | X | X |
| Indium hydroxide (In(OH)3) 20661-21-6 ( 0.1 - 1 ) | X | X | - | - | - | - | - | - |

*"-" Not Listed*
*"X" Listed*

## US Federal Regulations

### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

| Chemical Name | SARA 313 - Threshold Values % |
|---|---|
| Manganese dioxide - 1313-13-9 | 1.0 |
| Zinc - 7440-66-6 | 1.0 |
| Zinc oxide - 1314-13-2 | 1.0 |

### SARA 311/312 Hazard Categories

Does not apply

### CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---|---|---|---|---|
| Zinc 7440-66-6 | - | X | X | - |
| Zinc oxide 1314-13-2 | - | X | - | - |
| Copper 7440-50-8 | - | X | X | - |
| Potassium hydroxide 1310-58-3 | 1000 lb | - | - | X |

### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Chemical Name | Hazardous Substances RQs | CERCLA/SARA RQ | Reportable Quantity (RQ) |
|---|---|---|---|
| Zinc 7440-66-6 | 1000 lb | - | RQ 454 kg final RQ<br>RQ 1000 lb final RQ |
| Potassium hydroxide 1310-58-3 | 1000 lb | - | RQ 1000 lb final RQ<br>RQ 454 kg final RQ |

## US State Regulations

### California Proposition 65

This product does not contain any Proposition 65 chemicals

### U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations

| Chemical Name | New Jersey | Massachusetts | Pennsylvania |
|---|---|---|---|
| Manganese dioxide 1313-13-9 | X | - | X |
| Zinc 7440-66-6 | X | X | X |

| | | | |
|---|---|---|---|
| Zinc oxide<br>1314-13-2 | X | X | X |
| Potassium hydroxide<br>1310-58-3 | X | X | X |

## 16. OTHER INFORMATION

**Revision Note**

| | |
|---|---|
| Issue Date | 10-Mar-2015 |
| Revision date | 10-Mar-2015 |
| Revision Note | Not applicable |

**Key or legend to abbreviations and acronyms used in the safety data sheet**

**TWA** - TWA (time-weighted average)
**STEL** - STEL (Short Term Exposure Limit)
**Ceiling** - Maximum limit value
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
**ENCS** - Japan Existing and New Chemical Substances
**IECSC** - China Inventory of Existing Chemical Substances
**KECL** - Korean Existing and Evaluated Chemical Substances
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances
**AICS** - Australian Inventory of Chemical Substances

**Disclaimer**

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**-------- End of Safety Data Sheet --------**