Rechargeable Li-ion Battery - INR18650P 2000mAh 3.6V

Safety Data Sheet

This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

Date of issue: 24/07/2019 Revision date: 24/07/2019 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form	:	Article
Trade name	:	Rechargeable Li-ion Battery - INR18650P 2000mAh 3.6V
Other means of identification	:	Voltage : 3.6V Watt-Hour: 7.2Wh Battery Weight: 42g

1.2. Recommended use and restrictions on use

Main use category	:	Power supply.
Restrictions on use	:	No information available.

1.3. Supplier

Supplier	:	Guangzhou Great Power Energy & Technology Co.,Ltd.
Address	:	No.912,West Village Segment,Shi Liang Road,Shawan Town,Panyu Guangdong Province P.R.China
Postal Code		511483
Phone	:	86-020-39196828
E-mail	:	lcni@greatpower.net

1.4. Emergency telephone number

+86-020-39196828

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

The batteries are not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there's risk of rupture, fire, heat, leakage of internal components,which could cause casualty loss.

In the case of rupture, the following hazards may expose:

Skin corrosion/irritation, Category 2

Serious eye damage/eye irritation, Category 2

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US)	:	Warning
Hazard statements (GHS-US)	:	Causes skin irritation. Causes serious eye irritation.
Precautionary statements (GHS-US)	:	Wash hands, forearms and face thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. If on skin: Wash with plenty of water/… IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Specific treatment (see supplemental first aid instruction on this label) If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

2.3. Other hazards which do not result in classification

This product should not present a health hazard when used under reasonable conditions. If contact with the internal components of the battery may be irritating to skin, eyes and mucous membranes. Fire will produce irritating, corrosive and/or toxic gases

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
Iron	(CAS-No.) 7439-89-6	31.1
Cobalt lithium manganese nickel oxide	(CAS-No.) 182442-95-1	28.4
Graphite	(CAS-No.) 7782-42-5	17.1
Copper	(CAS-No.) 7440-50-8	5.7
Diethyl carbonate	(CAS-No.) 105-58-8	4.7
Dimethyl carbonate	(CAS-No.) 616-38-6	3.8
Ethylene carbonate	(CAS-No.) 96-49-1	3.4
Aluminum	(CAS-No.) 7429-90-5	2.5
Polypropylene	(CAS-No.) 9003-07-0	2
Phosphate(1-), hexafluoro-, lithium	(CAS-No.) 21324-40-3	1.3

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : No hazards which require special first aid measures.

If you feel unwell, seek medical advice (show directions for use or safety data sheet if possible).

First-aid measures after inhalation : There will be no dangerous during normal use. But breathe in a large number of batteries, or heat released from the gas, it will stimulate the respiratory tract and eyes. Remove to fresh air immediately. Get medical treatment immediately

First-aid measures after skin contact : There will be no dangerous during normal use. But contacting battery electrolyte, may cause severe irritation or burns.

First-aid measures after eye contact : There will be no dangerous during normal use. But contacting battery electrolyte can burn the eyes.

Flush the eyes with plenty of clean water for at least 15 minutes immediately, without rubbing. Get immediate medical treatment. If appropriate procedures are not taken, this may cause eye injury.

First-aid measures after ingestion : Ingestion of internal chemical materials may cause mouth, throat and intestinal irritation and damage.

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

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : No information available.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

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

Unsuitable extinguishing media : No information available.

5.2. Specific hazards arising from the chemical

Fire hazard : Battery can be overheated by an external source or by internal shorting and develop metal hydroxide mist.

Toxic vapor may release in case of fire.

Containers may explode when heated.

Fire fighting water runoff and dilution water may be toxic and corrosive and may cause adverse environmental impacts.

Since vapour, generated from burning batteries may make eyes, nose and throat irritates, be sure to extinguish the fire on the windward side. Wear the respiratory protection equipment in some cases.

Exposure to the ingredients contained within the battery pack could be harmful under some circumstances.

Toxic vapor may release in case of fire. : Thermal decomposition can lead to release of irritating and toxic gases and vapors

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

Other information : Evacuate personnel to a safe area. Ensure adequate ventilation, especially in confined areas. Eliminate every possible source of ignition. Move containers from fire area if it can be done without personal risk. Cool tanks/drums with water spray/remove them into safety. Stay upwind/keep distance from source.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : No open flames, no sparks, and no smoking. Avoid contact with skin, eyes and clothing. Do not breathe dust/fume/gas/mist/vapors/spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Stop leak if safe to do so. Evacuate personnel to a safe area. Ensure adequate ventilation, especially in confined areas.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage. Move containers from fire area if it can be done without personal risk. Contain large spillage with sand or earth.

Methods for cleaning up : Take up liquid spill into absorbent material. Clean up any spills as soon as possible, using an absorbent material to collect it. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : When packing the batteries, do not allow battery terminals to contact each other, or contact with other metals.

Be sure to pack batteries by providing partitions in the packaging box, or in a separate plastic bag so that the single batteries are not mixed together.

Use strong material for packaging boxes so that they will not be damaged by vibration, impact, dropping and stacking during their transportation.

Do not short-circuit, recharge, deform, throw into fire or disassemble.

Do not mix different type of batteries.

Do not solder directly onto batteries.

Insert the battery correctly in electrical equipment.

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a cool and dry area, but prevent condensation on cell or battery terminals.

High temperature may damage the performance of the battery.

Protect from physical damage and short circuits.

To avoid risk of fire or explosion, keep sparks and other sources of ignition away from the battery.

Do not allow metal objects to simultaneously contact both positive and negative terminal of batteries.

Do not stack battery directly on another battery.

Do not store batteries on electrically conductive surfaces.

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

Keep locked up and out of reach of children

Keep away from food, drink and animal feeding stuffs

Store in accordance with local regulations

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Graphite (7782-42-5)		
ACGIH	ACGIH TWA (mg/m³)	2 mg/m³ (all forms except graphite fibers-respirable particulate matter)
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (synthetic-total dust) 5 mg/m³ (synthetic-respirable fraction)
IDLH	US IDLH (mg/m³)	1250 mg/m³
NIOSH	NIOSH REL (TWA) (mg/m³)	2.5 mg/m³ (natural-respirable dust)

Phosphate(1-), hexafluoro-, lithium (21324-40-3)
Not applicable

Ethylene carbonate (96-49-1)
Not applicable

Diethyl carbonate (105-58-8)
Not applicable

Dimethyl carbonate (616-38-6)
Not applicable

Polypropylene (9003-07-0)
Not applicable

Iron (7439-89-6)
Not applicable

Copper (7440-50-8)		
ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³ (fume)
OSHA	OSHA PEL (TWA) (mg/m³)	0.1 mg/m³ (fume) 1 mg/m³ (dust and mist)
IDLH	US IDLH (mg/m³)	100 mg/m³ (dust, fume and mist)
NIOSH	NIOSH REL (TWA) (mg/m³)	1 mg/m³ (dust and mist) 0.1 mg/m³ (fume)

Aluminum (7429-90-5)		
ACGIH	ACGIH TWA (mg/m³)	1 mg/m³ (respirable particulate matter)
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)
NIOSH	NIOSH REL (TWA) (mg/m³)	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)

Cobalt lithium manganese nickel oxide (182442-95-1)
Not applicable

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Remove all sources of ignition.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Under normal condition of use and handling no special protection is required for sealed battery. In the event of battery case breakage, should be wear appropriate safety gloves

Eye protection:

Under normal condition of use and handling no special protection is required for sealed battery. Use appropriate safety glasses when there is the risk of splash

Skin and body protection:

Under normal condition of use and handling no special protection is required for sealed battery. It is recommended to wear appropriate protective clothing when the battery case is broken.

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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Color	:	No data available
Odor	:	Odourless.
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Boiling point	:	No data available
Flash point	:	Not applicable
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	Not flammable
Vapor pressure	:	Not applicable
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	Not applicable
Viscosity, dynamic	:	Not applicable
Explosion limits	:	Not applicable
Explosive properties	:	Not an explosive
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition. Avoid contact with incompatible materials

10.5. Incompatible materials

Oxidizing agent. Strong acid. Strong base.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Phosphate(1-), hexafluoro-, lithium (21324-40-3)	
LD50 oral rat	50 - 300 mg/kg

Ethylene carbonate (96-49-1)	
LD50 oral rat	10 g/kg

Dimethyl carbonate (616-38-6)	
LD50 oral rat	13 g/kg
LD50 dermal rabbit	> 5 g/kg
LC50 inhalation rat (mg/l)	140 mg/l/4h

Iron (7439-89-6)	
LD50 oral rat	30 g/kg

Cobalt lithium manganese nickel oxide (182442-95-1)	
LC50 inhalation rat (mg/l)	0.05 - 0.5 mg/l/4h

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Polypropylene (9003-07-0)	
IARC group	3 - Not classifiable

Cobalt lithium manganese nickel oxide (182442-95-1)	
IARC group	1 - Carcinogenic to humans

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Copper (7440-50-8)	
LC50 fish	0.0068 - 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

Copper (7440-50-8)	
LC50 fish	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known effects from this product.
GWPmix comment : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not applicable

Transportation of Dangerous Goods

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Copper	CAS-No. 7440-50-8	5.7%
Aluminum	CAS-No. 7429-90-5	2.5%

Phosphate(1-), hexafluoro-, lithium (21324-40-3)	
EPA TSCA Regulatory Flag	P - P - indicates a commenced Premanufacture Notice (PMN) substance.

Polypropylene (9003-07-0)	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).

Copper (7440-50-8)	
CERCLA RQ	5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm

Cobalt lithium manganese nickel oxide (182442-95-1)	
EPA TSCA Regulatory Flag	E - E - indicates a substance that is the subject of a Section 5(e) Consent Order under TSCA. P - P - indicates a commenced Premanufacture Notice (PMN) substance. S - S - indicates a substance that is identified in a final Significant New Use Rule.

15.2. International regulations

CANADA

Graphite (7782-42-5)
Listed on the Canadian DSL (Domestic Substances List)

Phosphate(1-), hexafluoro-, lithium (21324-40-3)
Listed on the Canadian NDSL (Non-Domestic Substances List)

Ethylene carbonate (96-49-1)
Listed on the Canadian DSL (Domestic Substances List)

Diethyl carbonate (105-58-8)
Listed on the Canadian DSL (Domestic Substances List)

Dimethyl carbonate (616-38-6)
Listed on the Canadian DSL (Domestic Substances List)

Polypropylene (9003-07-0)
Listed on the Canadian DSL (Domestic Substances List)

Iron (7439-89-6)
Listed on the Canadian DSL (Domestic Substances List)

Copper (7440-50-8)
Listed on the Canadian DSL (Domestic Substances List)

Aluminum (7429-90-5)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Graphite (7782-42-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Phosphate(1-), hexafluoro-, lithium (21324-40-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Ethylene carbonate (96-49-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Diethyl carbonate (105-58-8)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Dimethyl carbonate (616-38-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Iron (7439-89-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Copper (7440-50-8)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Aluminum (7429-90-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Graphite (7782-42-5)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on Turkish inventory of chemical
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Phosphate(1-), hexafluoro-, lithium (21324-40-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Ethylene carbonate (96-49-1)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Diethyl carbonate (105-58-8)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Dimethyl carbonate (616-38-6)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Polypropylene (9003-07-0)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Iron (7439-89-6)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on Turkish inventory of chemical
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Copper (7440-50-8)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on Turkish inventory of chemical Listed on the TCSI (Taiwan Chemical Substance Inventory)

Aluminum (7429-90-5)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on Turkish inventory of chemical Listed on the TCSI (Taiwan Chemical Substance Inventory)

Cobalt lithium manganese nickel oxide (182442-95-1)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Issue date : 13/06/2019

Revision date : 13/06/2019

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

ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association
ADN	European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterway
RID	Regulations Concerning the International Carriage of Dangerous Godds by Rail
PBT	Persistent, Bioaccumulative and Toxic
vPvB	Very Persistent and Very Bioaccumulative
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
LC50	Lethal Concentration 50
LD50	Lethal Dose 50
EC50	Effective Concentration 50
TWA	Time Weighted Average
STEL	Short Term Exposure Limit

Key literature references and sources for data
ECHA: http://echa.europa.eu/ IFA GESTIS: http://gestis-en.itrust.de/nxt/gateway.dll?f=templates$fn=default.htm$vid=gestiseng:sdbeng HSDB: http://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm ICSC: http://www.ilo.org/dyn/icsc/showcard.home eChemPortal: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en NITE-CHRIP: http://www.nite.go.jp/en/chem/chrip/chrip_search/srhInput

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product