# SAFETY DATA SHEET

Issuing Date 16-Apr-2010

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**Revision Number** 1



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

Product identifier

Product Name	Battery Model DS702025		
Other means of identification			
Synonyms	None		
Recommended use of the chemic	al and restrictions on use		
Recommended Use	LITHIUM ION BATTERIES		
Uses advised against	No information available		
Details of the supplier of the safe	ty data sheet		
Supplier Name Supplier Address	Tigerpow battery(DongGuan) co., ltd No1,LeiTian Str., XiangShan Rd.,QingXi District DongGuan GuangDong 523600 CN		
Supplier Phone Number	Phone:86-13377782960 Contact Phone86-769-82098581		
Supplier Email Emergency telephone number	sales@tigerpow.com		

### 2. HAZARDS IDENTIFICATION

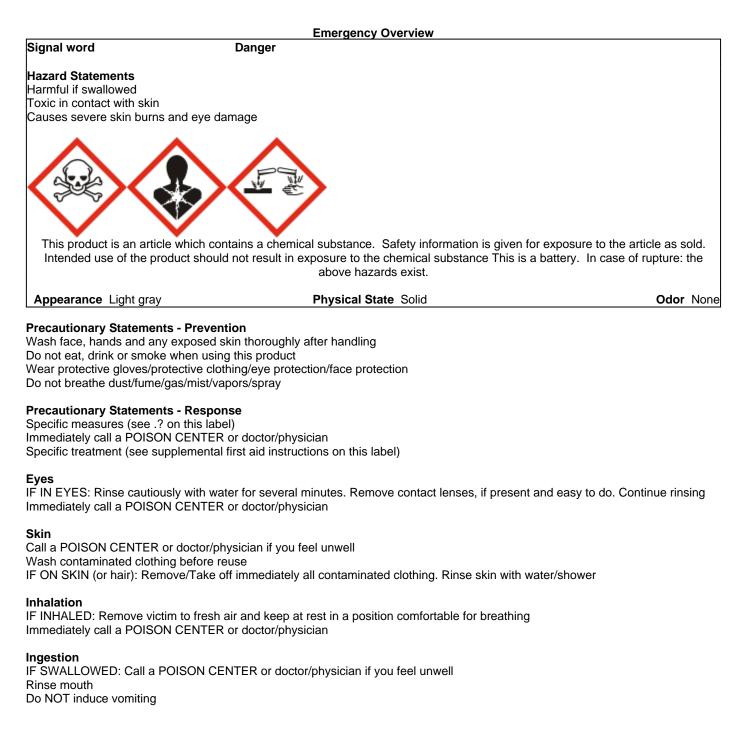
#### **Classification**

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 3
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (repeated exposure)	Category 1



#### GHS Label elements, including precautionary statements



**Precautionary Statements - Storage** 

Store locked up

**Precautionary Statements - Disposal** 

Dispose of contents/container to an approved waste disposal plant



#### Hazards not otherwise classified (HNOC)

Not applicable

#### Unknown Toxicity

18% of the mixture consists of ingredient(s) of unknown toxicity

#### **Other information**

Very toxic to aquatic life with long lasting effects

#### Interactions with Other Chemicals

No information available.

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No	Weight-%	Trade Secret
Lithium Cobalt Oxide (CoLiO2)	12190-79-3	15 - 40	*
Phosphate(1-), hexafluoro-, lithium	21324-40-3	10 - 30	*
Graphite	7782-42-5	10 - 30	*
Copper	7440-50-8	10 - 30	*
Aluminum foil	7429-90-5	5 - 10	*

\*The exact percentage (concentration) of composition has been withheld as a trade secret

### 4. FIRST AID MEASURES

#### First aid measures

General Advice	First aid is upon rupture of sealed battery.	
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.	
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.	
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately if symptoms occur.	
Ingestion	Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.	

**Self-protection of the first aider** Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

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

Most Important Symptoms and Burning sensation. Effects

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

Notes to PhysicianProduct is a corrosive material. Use of gastric lavage or emesis is<br/>contraindicated. Possible perforation of stomach or esophagus should be<br/>investigated. Do not give chemical antidotes. Asphyxia from glottal edema may<br/>occur. Marked decrease in blood pressure may occur with moist rales, frothy<br/>sputum, and high pulse pressure.

### **5. FIRE-FIGHTING MEASURES**

#### Suitable Extinguishing Media

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

#### Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

No.

#### Specific Hazards Arising from the Chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

#### Hazardous Combustion Products

Carbon oxides.

#### Explosion Data Sensitivity to Mechanical Impact

Sensitivity to Static Discharge No.

#### 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

Personal Precautions	Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Other Information	Refer to protective measures listed in Sections 7 and 8.
Environmental Precautions	
Environmental Precautions	Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.
Methods and material for containm	ent and cleaning up
Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.
	7. HANDLING AND STORAGE
Precautions for safe handling	
Handling	In case of rupture. Use personal protection equipment. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not breathe dust/fume/gas/mist/vapors/spray.
Conditions for safe storage include	ing any incompatibilities

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

Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other
	materials.

Acids. Bases. Oxidizing agent.

Incompatible Products

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### **Control parameters**

#### **Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	TWA: 0.02 mg/m <sup>3</sup>	-	
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m <sup>3</sup> F	TWA: 2.5 mg/m <sup>3</sup> F TWA: 2.5 mg/m <sup>3</sup> dust (vacated) TWA: 2.5 mg/m <sup>3</sup>	



<b>•</b> • • •			
Graphite	TWA: 2 mg/m <sup>3</sup> respirable fraction	TWA: 15 mg/m <sup>3</sup> total dust	IDLH: 1250 mg/m <sup>3</sup>
7782-42-5	all forms except graphite fibers	synthetic	TWA: 2.5 mg/m <sup>3</sup> respirable dust
		TWA: 5 mg/m <sup>3</sup> respirable fraction	
		synthetic	
		(vacated) TWA: 2.5 mg/m <sup>3</sup>	
		respirable dust natural	
		(vacated) TWA: 10 mg/m <sup>3</sup> total	
		dust synthetic	
		(vacated) TWA: 5 mg/m <sup>3</sup>	
		respirable fraction synthetic	
		TWA: 15 mppcf natural	
Copper	TWA: 0.2 mg/m <sup>3</sup> fume TWA: 1	TWA: 0.1 mg/m <sup>3</sup> fume	IDLH: 100 mg/m <sup>3</sup> dust, fume and
7440-50-8	mg/m <sup>3</sup> Cu dust and mist	TWA: 1 mg/m <sup>3</sup> dust and mist	mist
	-	(vacated) TWA: 0.1 mg/m <sup>3</sup> Cu	TWA: 1 mg/m <sup>3</sup> dust and mist
		dust, fume, mist	TWA: 0.1 mg/m <sup>3</sup> fume
Aluminum foil	TWA: 1 mg/m <sup>3</sup> respirable fraction	TWA: 15 mg/m <sup>3</sup> total dust	TWA: 10 mg/m <sup>3</sup> total dust
7429-90-5		TWA: 5 mg/m <sup>3</sup> respirable fraction	TWA: 5 mg/m <sup>3</sup> respirable dust
		(vacated) TWA: 15 mg/m <sup>3</sup> total	<b>3</b> 1
		dust	
		(vacated) TWA: 5 mg/m <sup>3</sup>	
		respirable fraction (vacated)	
		TWA: 5 mg/m <sup>3</sup> Al Àluminum	

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health

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Other Exposure Guidelines
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Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992) See section 15 for national exposure control parameters

#### Appropriate engineering controls

Engineering Measures	Showers
	Eyewash stations
	Ventilation systems

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

Eye/Face Protection	Face protection shield.
Skin and Body Protection	Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.
Respiratory Protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. For environmental protection, remove and wash all contaminated protective equipment before re-use. No information available.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### **Physical and Chemical Properties**

Physical State	Solid		
Appearance	Light gray	Odor	None
Color	No information available	Odor Threshold	No information available



Property_	Values
pH	No data available
Melting / freezing point	No data available
Boiling point / boiling range	No data available
Flash Point	No data available
Evaporation Rate	No data available
Flammability (solid, gas)	No data available
Flammability Limit in Air	
Upper flammability limit	No data available
Lower flammability limit	No data available
Vapor pressure	No data available
Vapor density	No data available
Specific Gravity	No data available
Water Solubility	Insoluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Kinematic viscosity	No data available
Dynamic viscosity	No data available
Explosive properties	No data available
Oxidizing Properties	No data available
Other Information	

#### **Other Information**

Softening Point VOC Content (%) Particle Size Particle Size Distribution No data available No data available No data available

#### Remarks Method None known None known

### **10. STABILITY AND REACTIVITY**

#### **Reactivity**

No data available.

#### **Chemical stability**

Stable under recommended storage conditions.

#### Possibility of Hazardous Reactions

None under normal processing.

#### **Hazardous Polymerization**

Hazardous polymerization does not occur.

#### Conditions to avoid

Exposure to air or moisture over prolonged periods.

#### Incompatible materials

Acids. Bases. Oxidizing agent.

#### **Hazardous Decomposition Products**

Carbon oxides.

### **11. TOXICOLOGICAL INFORMATION**

#### Information on likely routes of exposure



Product Information	Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:.
Inhalation	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.
Eye Contact	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
Skin Contact	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. Toxic in contact with skin. May be absorbed through the skin in harmful amounts.
Ingestion	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

#### **Component Information**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Graphite	> 10000 mg/kg (Rat)	-	-
7782-42-5			

#### Information on toxicological effects

Erythema (skin redness). Burning. May cause blindness. Coughing and/ or wheezing. Symptoms

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.

#### Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen. Chamical Na -IARC

Chemical Name	ACGIH	IARC	NTP	OSHA
Lithium Cobalt Oxide	A3	Group 2B		Х
(CoLiO2)				
12190-79-3				
ACGIH (American Conference of Governmental Industrial Hygienists)				
A3 - Animal Carcinogen		50 ,		

IARC (International Agency for Research on Cancer) Group 2B - Possibly Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

No information available.

### STOT - single exposure

**Reproductive Toxicity** 

No information available.



STOT - repeated exposure	Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).
Chronic Toxicity	Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause adverse liver effects.
Target Organ Effects	Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Central Vascular System (CVS). Kidney. Liver. Lungs.
Aspiration Hazard	No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

#### ATEmix (oral) 1,577.00 mg/kg ATEmix (dermal) 946.00 mg/kg (ATE)

### **12. ECOLOGICAL INFORMATION**

#### **Ecotoxicity**

Very toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Copper 7440-50-8	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.052 mg/L (Oncorhynchus mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas)		48h EC50: = 0.03 mg/L

### Persistence and Degradability

No information available.

Bioaccumulation No information available

#### Other adverse effects

No information available.



## **13. DISPOSAL CONSIDERATIONS**

#### Waste treatment methods

Disposal methods	Should not be released into the environment.
Contaminated Packaging	Dispose of in accordance with federal, state and local regulations.

#### California Hazardous Waste Codes 141

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

Chemical Name	California Hazardous Waste
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	Toxic
Copper 7440-50-8	Toxic
Aluminum foil 7429-90-5	Ignitable powder

### **14. TRANSPORT INFORMATION**

Note:	The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule) Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"
DOT Proper Shipping Name Hazard Class	NOT REGULATED NON REGULATED N/A
TDG	Not regulated
MEX	Not regulated
ICAO	Not regulated
IATA Proper Shipping Name Hazard Class	Not regulated NON REGULATED N/A
<u>IMDG/IMO</u> Hazard Class EmS-No.	Not regulated N/A F-A, S-I
RID	Not regulated

<u>ADR</u>	Not regulated

Not regulated

### International Inventories

TSCA DSL Complies All components are listed either on the DSL or NDSL.

**15. REGULATORY INFORMATION** 

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

#### **US Federal Regulations**

#### <u>SARA 313</u>

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	CAS No	Weight-%	SARA 313 - Threshold Values %
Lithium Cobalt Oxide (CoLiO2) - 12190-79-3	12190-79-3	15 - 40	0.1
Copper - 7440-50-8	7440-50-8	10 - 30	1.0
Aluminum foil - 7429-90-5	7429-90-5	5 - 10	1.0
SARA 311/312 Hazard Categories			
Acute Health Hazard	No		
Chronic Health Hazard	No		
Fire Hazard	No		
Sudden release of pressure hazard	No		
Reactive Hazard	No		

#### 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
Copper 7440-50-8		X	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	Extremely Hazardous Substances RQs	RQ
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Aluminum foil 7429-90-5			

#### US State Regulations

#### California Proposition 65

This product does not contain any Proposition 65 chemicals.

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

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
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Lithium Cobalt Oxide (CoLiO2) 12190-79-3	X		Х	Х	Х
Graphite 7782-42-5	Х	Х	Х		
Copper 7440-50-8	Х	X	Х	Х	Х
Aluminum foil 7429-90-5		X		X	

#### International Regulations

#### Mexico

National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Graphite		Mexico: TWA= 2 mg/m <sup>3</sup>
7782-42-5(10-30)		
Copper		Mexico: TWA= 1 mg/m <sup>3</sup>
7440-50-8 (10 - 30)		Mexico: TWA= 0.2 mg/m <sup>3</sup>
		Mexico: STEL= 2 mg/m <sup>3</sup>
Aluminum foil		Mexico: TWA 10 mg/m <sup>3</sup>
7429-90-5 ( 5 - 10 )		
Antico - Occupational Exposure Limits - Carcinogens	•	

Mexico - Occupational Exposure Limits - Carcinogens

#### Canada WHMIS Hazard Class

Non-controlled

## **16. OTHER INFORMATION**

NFPA	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazards 0	Flammability 0	Physical Hazard 0	Personal Protection X
Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501			
Issuing Date Revision Date Revision Note	16-Apr-20 04-Feb-20 No inform			

#### Disclaimer

The information provided in this 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

