Issuing Date No data available

SAFETY DATA SHEET

Revision Date 18-Aug-2017

Revision Number 1



Droductidentifier

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

rioductidentiller				
Product Name	Rechargeable Li-ion Polymer Battery MLP501516			
Other means of identification				
Synonyms	None			
Recommended use of the chemical	and restrictions on use			
Recommended Use	LITHIUM ION BATTERIES			
Uses advised against	No information available			
Details of the supplier of the safety	data sheet			
Supplier Name Supplier Address	McNair New Power Co.,LTD McNair industrial estate,1888 West of Meijing, road,Dalang Town,Dongguan,China,			
	P.C.523800			
Supplier Phone Number	Phone:(+86) -0769-83015357 Fax: (+86) -0769-83195372			
Supplier Email Emergencytelephone number	<u>yangsanming@mcnair.com.cn</u> Phone: (+86) -0769-83010160			

2. HAZARDS IDENTIFICATION

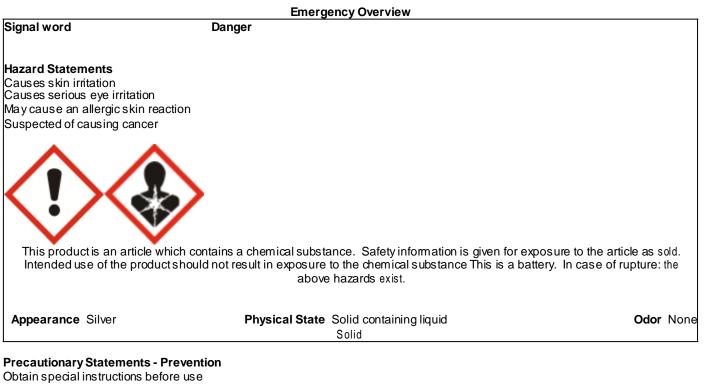
<u>Classification</u>

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.

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1



GHS Label elements, including precautionary statements



Do not handle until all safety precautions have been read and understood Use personal protective equipment as required Wash face, hands and any exposed skin thoroughly after handling Contaminated work dothing should not be allowed out of the workplace Wear protective gloves Do not breathe dust/fume/gas/mist/vapors/spray Do not eat, drink or smoke when using this product Wear eye/face protection

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention

Skin

IF ON SKIN: Wash with plenty of soap and water Take off contaminated clothing and wash before reuse If skin irritation or rash occurs: Get medical advice/attention

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

37.3% of the mixture consists of ingredient(s) of unknown toxicity

Other information

Very to xic to aquatic life with long lasting effects Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

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	30 - 60	*
Graphite	7782-42-5	10 - 30	*
Copper	7440-50-8	5 - 12	*
Ethylene carbonate	96-49-1	5 - 10	*
Aluminum foil	7429-90-5	1 - 5	*
Phosphate(1-), hexafluoro-, lithium	21324-40-3	1 - 5	*
Carbon black	1333-86-4	0.1 - 1	*
Nickel	7440-02-0	0.1 - 1	*

*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. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.		
Skin Contact	Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.		
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.		
Ingestion	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.		
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. 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 effects, both acute and delayed

Most Important Symptoms and Burning sensation. Itching. Rashes. Hives.



Effects

Indication of any immediate medical attention and special treatment needed

Notes to Physician

May cause sensitization of susceptible persons. Treat symptomatically.

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.

Specific Hazards Arising from the Chemical

Product is or contains a sensitizer. May cause sensitization by skin contact.

Hazardous Combustion Products

Carbon oxides.

Explosion Data Sensitivity to Mechanical Impact No.

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	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.	
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.	
Methods and material for containment 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: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.		
Conditions for safe storage, including any incompatibilities			
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place.		
Incompatible Products	Strong acids. Strong oxidizing agents. Strong bases.		
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 ³	-	
Graphite	TWA: 2 mg/m ³ respirable fraction	TWA: 15 mg/m ³ total dust	IDLH: 1250 mg/m ³
7782-42-5	all forms except graphite fibers	synthetic TWA: 5 mg/m ³ respirable fraction synthetic (vacated) TWA: 2.5 mg/m ³ respirable dust natural	TWA: 2.5 mg/m ³ respirable dust
		(vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirablefraction synthetic TWA: 15 mppcf natural	
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume TWA: 1 mg/m ³ Cu dust and mist	TWA: 0.1 mg/m³ fume TWA: 1 mg/m³ dust and mist (vacated) TWA: 0.1 mg/m³ Cu dust, fume, mist	IDLH: 100 mg/m ³ dust, fume and mist TWA: 1 mg/m ³ dust and mist TWA: 0.1 mg/m ³ fume
Aluminum foil 7429-90-5	TWA: 1 mg/m ³ respirable fraction	TWA: 5 mg/m ³ respirablefraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirablefraction (vacated) TWA: 5 mg/m ³ AI Aluminum	TWA: 10 mg/m³ total dust TWA: 5 mg/m³ respirable dust
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m³ F TWA: 2.5 mg/m³ dust (vacated) TWA: 2.5 mg/m³	
Carbon black 1333-86-4	TWA: 3 mg/m ³ inhalable fraction	TWA: 3.5 mg/m ³ (vacated) TWA: 3.5 mg/m ³	IDLH: 1750 mg/m ³ TWA: 3.5 mg/m ³ TWA: 0.1 mg/m ³ Carbon black in presence of Polycyclic aromatic hydrocarbons PAH
Nickel	TWA: 1.5 mg/m ³	TWA: 1 mg/m ³	IDLH: 10 mg/m ³
7440-02-0		(vacated) TWA: 1 mg/m ³	TWA: 0.015 mg/m ³

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

Other Exposure Guidelines

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, suc	ch as personal protective equipment
Eye/Face Protection	If splashes are likely to occur:. Wear safety glasses with side shields (or goggles). None required for consumer use.
Skin and Body Protection	Wear protective gloves and protective clothing. Long sleeved clothing. 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. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical and Chemical Propertie	<u>95</u>		
Physical State	Solid containing liquid, Solid		
Appearance	Silver	Odor	None
Color	No information available	Odor Threshold	No information available
<u>Property</u>	<u>Values</u>	Remarks Method	
рН	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density No data available		None known	
Specific Gravity	No data available	None known	
Water Solubility	Insoluble in water	None known	
Solubility in other solvents	No data available	None known	
Partition coefficient: n-octanol/	waterNo data available	None known	
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	
Explosive properties	No data available		
Oxidizing Properties	No data available		
Other Information			
Softening Point	No data available		
VOC Content (%)	No data available		
Dertiele Cine	No doto ovoilable		

No data available

Particle Size

Particle Size Distribution

10. STABILITY AND REACTIVITY

<u>Reactivity</u>

No data available.

<u>Chemical stability</u> Stable under recommended storage conditions. <u>Possibility of Hazardous Reactions</u> None under normal processing. <u>Hazardous Polymerization</u> Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied. <u>Incompatible materials</u> Strong acids. Strong oxidizing agents. Strong bases. <u>Hazardous Decomposition Products</u> 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. May cause irritation of respiratory tract.
Eye Contact	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to eyes. May cause redness, itching, and pain. May cause temporary eye irritation.
Skin Contact	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to skin. Prolonged contact may cause redness and irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Graphite 7782-42-5	> 10000 mg/kg (Rat)	-	-
Carbon black 1333-86-4	> 15400 mg/kg (Rat)	> 3 g/kg (Rabbit)	-
Nickel 7440-02-0	> 9000 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms

Erythema (skin redness). May cause redness and tearing of the eyes. Itching. Rashes.



Hives.

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

Sensitization	Maycauses	ensitization of susceptib	ole persons. May cause sensitiza	ation by skin contact.	
Mutagenic Effects	No informatic	No information available.			
Carcinogenicity	The table bel	ow indicates whether e	ach agency has listed any ingred	dientas a carcinogen.	
Chemical Name	ACGIH	IAR C	NTP	OSHA	
Lithium Cobalt Oxide	A3	Group 2B		Х	
(CoLiO2)					
12190-79-3					
Carbon black	A3	Group 2B		Х	
1333-86-4		0	Deserve her Antisia start	V	
Nickel 7440-02-0		Group 2B	Reasonably Anticipated	Х	
	erence of Governmental Ind				
Group 2B - Possibly Card Group 3 - Not Classifiabl NTP (Na tional Toxicolo Reasonably Anticipated	e as to Carcinogenicity in Hun	nans e a Human Carcinogen	nt of Labor)		
Reproductive Toxicity	No information	n available.			
STOT - single exposure	No information	n available.			
STOT - repeated exposu	classification 1910.1200), t	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	may cause cl classified by t	Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause adverse liver effects. Carbon black has been classified by the International Agency for Research on Cancer (IARC) as possibly carcinogenic to humans (Group 2B) by inhalation.			
Target Organ Effects		Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Central Vascular System (CVS). Kidney. Liver. Lungs.			
Aspiration Hazard	No informatic	n available.			
Numerical measures of t	aviaity. Braduat Informat	ion			

Numerical measures of toxicity Product Information

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

ATEmix (oral) 16,500.00 mg/kg ATEmix (dermal) 9,900.00 mg/kg (ATE)

12. ECOLOGICAL INFORMATION

<u>Ecotoxicity</u>

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 EC 50: 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 mykiss) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas)		48h EC50: = 0.03 mg/L
Carbon black 1333-86-4				24h EC50: > 5600 mg/L
Nickel 7440-02-0	72h EC50: = 0.18 mg/L (Pseudokirchneriella subcapitata) 96h EC 50: 0.174 - 0.311 mg/L (Pseudokirchneriella subcapitata)	96h LC50: > 100 mg/L (Brachydanio rerio) 96h LC50: = 1.3 mg/L (Cyprinus carpio) 96h LC50: = 10.4 mg/L (Cyprinus carpio)		48h EC50: > 100 mg/L 48h EC50: = 1 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.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Nickel	(hazardous constituent - no	Included in waste streams:		
7440-02-0	waste number)	F006, F039		

California Hazardous Waste Codes 141

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

Chem ical Na me	California Hazardous Waste
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	Toxic
Copper 7440-50-8	Toxic
Aluminum foil 7429-90-5	lgnitable powder
Nickel	Toxic powder
7440-02-0	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 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"
<u>DOT</u> Proper Shipping Name Hazard Class Emergency Response Guide Number	NOT REGULATED NON REGULATED N/A 147
TDG	Not regulated
<u>MEX</u>	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
<u>RID</u>	Not regulated
ADR	Not regulated
ADN	Not regulated

15. REGULATORY INFORMATION

International Inventories

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

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

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	CAS No	Weight-%	SARA 313 - Threshold Values %
Lithium Cobalt Oxide (CoLiO2) - 12190-79-3	12190-79-3	30 - 60	0.1
Copper - 7440-50-8	7440-50-8	5 - 10	1.0
Aluminum foil - 7429-90-5	7429-90-5	1 - 5	1.0
Nickel - 7440-02-0	7440-02-0	0.1 - 1	0.1
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		Х	Х	
Nickel 7440-02-0		Х	Х	

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 R Qs	RQ
Copper 7440-50-8	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Aluminum foil 7429-90-5			
Nickel 7440-02-0	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ



US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chem ical Na me	California Proposition 65
Carbon black - 1333-86-4	Carcinogen
Nickel - 7440-02-0	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Na me	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	Х		Х	Х	Х
Graphite 7782-42-5	Х	Х	Х		
Copper 7440-50-8	Х	X	Х	Х	Х
Diethyl carbonate 105-58-8	Х	Х	Х		
Ethylene carbonate 96-49-1		X	Х		
Aluminum foil 7429-90-5		Х		Х	
Carbon black 1333-86-4	Х	X	Х		Х
Nickel 7440-02-0	Х	Х	Х	Х	Х

International Regulations

Mexico

.

National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Graphite 7782-42-5 (10 - 30)		Mexico: TWA= 2 mg/m ³
Copper 7440-50-8 (5 - 10)		Mexico: TWA= 1 mg/m ³ Mexico: TWA= 0.2 mg/m ³ Mexico: STEL= 2 mg/m ³
Aluminum foil 7429-90-5 (1 - 5)		Mexico: TWA 10 mg/m ³
Carbon black 1333-86-4 (0.1 - 1)		Mexico: TWA 3.5 mg/m ³ Mexico: STEL 7 mg/m ³
Nickel 7440-02-0 (0.1 - 1)		Mexico: TWA 1 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

Canada WHMIS Hazard Class

Non-controlled

16. OTHER INFORMATION

NFPA HMIS	Health Hazards 1 Health Hazards 0	Flammability 0 Flammability 0	Instability 0 Physical Hazard 0	Physical and Chemical Hazards - Personal Protection X
Prepared By		v Power Co.,LTD ustrial estate,1888 West of	Meijing, road,	



	Dalang Town,Dongguan,China,
Revision Date	18-Aug-2017
Revision Note	No information available

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

