

SAFETY DATA SHEET

Hydroxychloroquine sulfate

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier	
Product name	: Hydroxychloroquine sulfate
EC number	: 212-019-3
CAS number	: 747-36-4
Product code	: Not available.
Product type	: Powder.
Other means of identification	 Ethanol, 2-[[4-[(7-chloro-4-quinolinyl)amino]pentyl]ethylamino]-, sulfate (1:1) (salt); hydroxychloroquine sulfate; Ethanol, 2-((4-((7-chloro-4-quinolinyl)amino)pentyl) ethylamino)-, sulfate (1:1) (salt); 2-[4-[(7-chloroquinolin-4-yl)amino]pentyl-ethylamino] ethanol, sulfuric acid
Chemical formula	: C18-H26-CI-N3-O.H2-O4-S

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product use	: Research.
Area of application	: Industrial applications.
Uses advised against	
None identified.	

1.3 Details of the supplier of the safety data sheet

BioLegend Inc. 8999 BioLegend Way San Diego, CA 92121 – USA Tel: +1-858-455-9588 (7:00AM – 5:00PM PT, M-F) e-mail address of person : cs@biolegend.com

e-mail address of person : responsible for this SDS

Only representative

BioLegend Inc. 4B Highgate Business Centre 33 Greenwood Place London, NW5 1LB - UK Tel: +44 (0) 20 3475 3880 http://www.biolegend.com/uk

1.4 Emergency telephone number

National advisory body/Poison CentreTelephone number: Call 111 if you urgently need medical help or advice but it's not a life-threatening situation (NHS 111 service).
NHS 111 is available 24 hours a day, 365 days a yearSupplier: +44 (0) 20 3475 3880 (9:00AM - 5:00PM GMT, M-F)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mono-constituent substance

Classification according to UK CLP/GHS

Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319

2.2 Label elements

Hazard pictograms

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

See Section 16 for the full text of the H statements declared above.

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

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Signal word		Warning						
Hazard statements	:	₩302 - Harr H315 - Cau H319 - Cau	ses skin irri	tation.	on.			
Precautionary statements								
Prevention	:		ot eat, drin	k or smoke	when usin	face protection ng this product		
Response	:	▶362 + P36 P302 + P35	4 - Take of 2 - IF ON S	f contamina KIN: Wash	ated clothin with plent	ng and wash it ly of water.	before reus	е.
Storage	:	Not applicat	ole.					
Disposal	:	▶501 - Disp national and				accordance w	ith all local,	regional,
Hazardous ingredients	1	ydroxychlo	roquine sul	phate				
Supplemental label elements	:	Not applical	ole.					
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	:	Not applical	ble.					
Special packaging requirem	en	<u>ts</u>						
Containers to be fitted with child-resistant fastenings	:	Not applicat	ble.					
Tactile warning of danger	:	Not applicat	ole.					
2.3 Other hazards								
Product meets the criteria	4	PBT	Р	В	Т	vPvB	vP	vB
for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII		No	N/A	N/A	No	N/A	N/A	N/A
Other hazards which do not result in classification	:	None know	۱.			I		

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SECTION 3: Composition/information on ingredients

3.1 Substances :	Mono-constituent substance	•		
Product/ingredient name	Identifiers	%	Classification	Туре
ydroxychloroquine sulphate	EC: 212-019-3 CAS: 747-36-4	100	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 See Section 16 for the full text of the H statements declared above.	[1]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Туре

[1] Constituent

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

SECTION 4: First aid measures

4.1 Description of first aid I	measures
Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	: Fush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs	<u>symptoms</u>
Eye contact	 Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing

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SECTION 4: First aid	d measures
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No specific data.
4.3 Indication of any immed	iate medical attention and special treatment needed
Notes to physician	: K case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	: No specific treatment.
SECTION 5: Firefigh	ting measures
5.1 Extinguishing media	
Suitable extinguishing media	: 🗾 Se dry chemical powder.
Unsuitable extinguishing media	: 🗹 not use water jet.
5.2 Special hazards arising	from the substance or mixture
Hazards from the substance or mixture	: May form explosible dust-air mixture if dispersed.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds hydrogen chloride (gas)
5.3 Advice for firefighters	
Special protective actions for fire-fighters	: Fromptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
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Special protective : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure equipment for fire-fighters mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, pro	tective equipment and emergency procedures
For non-emergency personnel	: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	: F specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
6.2 Environmental precautions	: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
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SECTION 6: Accidental release measures

6.3 Methods and material for containment and cleaning up

Small spill	: Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
Large spill	: Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
6.4 Reference to other sections	: See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures	: Fut on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)	
Recommendations	: Not available.
Industrial sector specific solutions	: Not available.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Biological exposure indices

None known.

Recommended monitoring procedures

: Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls	: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Individual protection meas	<u>ures</u>
Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. If operating conditions cause high dust concentrations to be produced, use dust goggles.
Skin protection	
Hand protection	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	Propriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

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SECTION 8: Exposure controls/personal protection

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Environmental exposure controls
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: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

<u>Appearance</u>			
Physical state	:	Solid. [Powder.]	
Colour	1	White.	
Odour	1	Not available.	
Odour threshold	:	Not available.	
Melting point/freezing point	:	Not available.	
Initial boiling point and boiling range	:	Not available.	
Flammability (solid, gas)	:	Not available.	
Lower and upper explosion limit	:	Not applicable.	
Flash point	:	Not applicable.	
Auto-ignition temperature	1	Not applicable.	
Decomposition temperature	÷	Not available.	
рН	4	Not applicable.	
Viscosity	4	Not applicable.	
Solubility(ies)	÷	Media	Result
		pold water hot water	Soluble Soluble
Partition coefficient: n-octanol/ water	:	Not available.	
Vapour pressure	:	Not available.	
Evaporation rate	1	Not applicable.	
Relative density	1	Not available.	
Vapour density	1	Not applicable.	
Explosive properties	1	Not available.	
Oxidising properties	1	Not available.	
Particle characteristics			
Median particle size	:	Not available.	
9.2 Other information			
Molecular weight	:	434 g/mole	
Physical/chemical properties comments	:	No additional information.	

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SECTION 10: Stabilit	y and reactivity
10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: The product is stable.
10.3 Possibility of hazardous reactions	: Vinder normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.
10.4 Conditions to avoid	: Kvoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
10.5 Incompatible materials	: Reactive or incompatible with the following materials: oxidising materials
10.6 Hazardous decomposition products	: Vinder 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

Conclusion/Summary : Not available.

Acute toxicity estimates

Product/ingredient name	Oral (mg/ kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	
ydroxychloroquine sulphate	500	N/A	N/A	N/A	N/A

Irritation/Corrosion	
Conclusion/Summary	: Not available.
Sensitisation	
Conclusion/Summary	: Not available.
Mutagenicity	
Conclusion/Summary	: Not available.
Carcinogenicity	
Conclusion/Summary	: Not available.
Reproductive toxicity	
Conclusion/Summary	: Not available.
Teratogenicity	
Conclusion/Summary	: Not available.
Specific target organ toxic	<u>city (single exposure)</u>
Not available.	

Specific target organ toxicity (repeated exposure)

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SECTION 11: Toxicological information

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure	-	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
Potential acute health effects	5	
Eye contact	:	🗭 auses serious eye irritation.
Inhalation	:	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
Skin contact	1	Causes skin irritation.
Ingestion	:	Harmful if swallowed.
Symptoms related to the phy	/sid	cal, chemical and toxicological characteristics
Eye contact	:	Adverse symptoms may include the following:
	-	pain or irritation
		watering
Inhalation		redness
Innalation		Adverse symptoms may include the following: respiratory tract irritation
		coughing
Skin contact	:	Adverse symptoms may include the following:
		irritation redness
Ingestion		No specific data.
ingoonon	1	
Delayed and immediate effect	<u>ts</u>	as well as chronic effects from short and long-term exposure
<u>Short term exposure</u>		
Potential immediate effects	1	Not available.
Potential delayed effects	:	Not available.
<u>Long term exposure</u>		
Potential immediate effects	1	Not available.
Potential delayed effects	:	Not available.
Potential chronic health eff	ect	<u>s</u>
Not available.		
Conclusion/Summary	:	Not available.
General	:	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	No known significant effects or critical hazards.
Reproductive toxicity	:	No known significant effects or critical hazards.
Other information	:	Not available.

SECTION 12: Ecological information

12.1 Toxicity

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (Koc)	: Not available.
Mobility	: Not available.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	Р	В	Т	vPvB	vP	vB
ydroxychloroquine sulphate	No	N/A	N/A	No	N/A	N/A	N/A

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

is. i waste treatment meth	
Product	
Methods of disposal	: The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.
Hazardous waste	: \mathbf{F} he classification of the product may meet the criteria for a hazardous waste.
Packaging	
Methods of disposal	Free generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
Special precautions	Fris material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Hydroxychloroquine sulfate

SECTION 14: Transport information

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	ADR/RID	ADN	IMDG	IATA	
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	
14.2 UN proper shipping name	-	-	-	-	
14.3 Transport hazard class(es)	-	-	-	-	
14.4 Packing group	-	-	-	-	
14.5 Environmental hazards	No.	No.	No.	No.	

user

14.6 Special precautions for : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk : Not available. according to IMO instruments

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

No listed substance

Seveso Directive

This product is not controlled under the Seveso Directive.

EU regulations

Hydroxychloroquine sulfate **SECTION 15: Regulatory information** : Not listed **Industrial emissions** (integrated pollution prevention and control) -Air **Industrial emissions** : Not listed (integrated pollution prevention and control) -Water **International regulations** Chemical Weapon Convention List Schedules I, II & III Chemicals Not listed. **Montreal Protocol** Not listed. Stockholm Convention on Persistent Organic Pollutants Not listed. **Rotterdam Convention on Prior Informed Consent (PIC)** Not listed. **UNECE Aarhus Protocol on POPs and Heavy Metals** Not listed. : Not available. **15.2 Chemical safety**

assessment

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms	 ATE = Acute Toxicity Estimate GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019 No. 720 and amendments DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level EUH statement = GB CLP-specific Hazard statement N/A = Not available PBT = Persistent, Bioaccumulative and Toxic PNEC = Predicted No Effect Concentration RRN = REACH Registration Number SGG = Segregation Group vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification

Classification	Justification
Acute Tox. 4, H302	Expert judgment
Skin Irrit. 2, H315	Expert judgment
Eye Irrit. 2, H319	Expert judgment

Full text of abbreviated H statements

⊮ 302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

Full text of classifications

SECTION 16: Other information

Acute Tox. 4 Eye Irrit. 2 Skin Irrit. 2	ACUTE TOXICITY - Category 4 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2	
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Date of previous issue	e : 02/06/2020	
Version	: 2	

Notice to reader

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

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