

Trade name: C-ENERGY™ ACTILION GHDR 15-4, ACTILION GHDR 10-4, ACTILION QX**Current version :** 1.0.0, issued: 11.04.2019**Replaced version:** -, issued: -**Region:** GB**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name****C-ENERGY™ ACTILION GHDR 15-4, ACTILION GHDR 10-4, ACTILION QX**Substance name Graphite (> 99,5 %)
REACH registration no. 01-2119486977-12**Identification numbers**CAS no. 7782-42-5
EC no. 231-955-3**1.2 Relevant identified uses of the substance or mixture and uses advised against****Relevant identified uses of the substance or mixture**

Mobile energy: Li-ion batteries

Uses advised against

None known

1.3 Details of the supplier of the safety data sheet**Address**Imerys Graphite & Carbon Switzerland Ltd.
Strada Industriale 12
6743 Bodio (Switzerland)Telephone no. +41 91 873 20 10
Fax no. +41 91 873 20 19
e-mail graphiteandcarbon.ch@imerys.com**Information provided by / telephone**

Research and Development

Advice on Safety Data Sheet

sdb_info@umco.de

1.4 Emergency telephone numberFor Hazardous Materials [or Dangerous Goods] Incident
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
International Number: +1 703-741-5970 (collect calls accepted)
Local number: +(44)-870-8200418**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification information**

This product does not meet the classification and labelling criteria given in the Regulation (EC) No 1272/2008 (CLP).

2.2 Label elements

Not relevant

2.3 Other hazards

PBT assessment

The product is not considered to be a PBT.

vPvB assessment

The product is not considered to be a vPvB.

SECTION 3: Composition/information on ingredients**3.1 Substances****Chemical characterization**

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EC no. 231-955-3**3.2 Mixtures**

Not applicable. The product is not a mixture.

SECTION 4: First aid measures**4.1 Description of first aid measures****General information**

In case of persisting adverse effects, consult a physician. Change contaminated clothing.

After inhalation

Remove affected person from the immediate area. Ensure supply of fresh air.

After skin contact

When in contact with the skin, clean with soap and water.

After eye contact

Remove contact lenses. Separate eyelids, wash the eyes thoroughly with water (15 min.).

After ingestion

Rinse out mouth and give plenty of water to drink. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

Foam; Carbon dioxide; Extinguishing powder; Water spray jet; Sand

Unsuitable extinguishing media

High power water jet

5.2 Special hazards arising from the substance or mixtureIn the event of fire, the following can be released: Carbon monoxide (CO); Carbon dioxide (CO₂)**5.3 Advice for firefighters**

Use self-contained breathing apparatus. Wear protective clothing.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Refer to protective measures listed in sections 7 and 8. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Avoid dust formation. High risk of slipping due to leakage/spillage of product.

For emergency responders

Personal protective equipment (PPE) - see Section 8. In case of emergency, use of personal protective equipment [DIN EN 469, EN 12021].

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up with dust-binding material or using a suitable vacuum cleaner. When picked up, treat material as prescribed under heading "Disposal considerations".

6.4 Reference to other sections

No data available.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Provide good ventilation at the work area (local exhaust ventilation, if necessary). If workplace exposure limits are exceeded, respiratory protection approved for this particular job must be worn.

General protective and hygiene measures

Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Avoid contact with eyes and skin. Remove contaminated clothing. Wash hands before breaks and after work. Do not inhale dust. Provide eye wash fountain in work area.

Advice on protection against fire and explosion

Under certain circumstances fine dust clouds may form explosive mixtures with air. Take precautionary measures against static charges. Keep away from sources of heat and ignition. Dust should be aspirated immediately on-the-spot.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep container tightly closed and dry.

Requirements for storage rooms and vessels

Containers which are opened must be carefully closed and kept upright to prevent leakage. Always keep in containers of same material as the original one.

Advice on storage assembly

None known

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

No	Substance name	CAS no.	EC no.
1	Dust		
List of approved workplace exposure limits (WELs) / EH40			
Dust respirable			
	WEL long-term (8-hr TWA reference period)	10	mg/m ³
	Comments	see Definition 44 "Dust"	
List of approved workplace exposure limits (WELs) / EH40			
Dust inhalable			
	WEL long-term (8-hr TWA reference period)	4	mg/m ³
	Comments	see Definition 44 "Dust"	

DNEL, DMEL and PNEC values

DNEL values (worker)

No	Substance name	CAS / EC no		
	Route of exposure	Exposure time	Effect	Value
1	Graphite	7782-42-5 231-955-3		
	inhalative	Long term (chronic)	local	1.2 mg/m ³

DNEL value (consumer)

No	Substance name	CAS / EC no		
	Route of exposure	Exposure time	Effect	Value
1	Graphite	7782-42-5 231-955-3		
	oral	Long term (chronic)	systemic	813 mg/kg/day
	inhalative	Long term (chronic)	local	0.3 mg/m ³

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Other information

The DNEL value (inhalation) is applicable for respirable fractions of graphite dust that can reach the alveolar regions of the lung.

8.2 Exposure controls

Appropriate engineering controls

No data available.

Personal protective equipment

Respiratory protection

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of dust formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified. Dust mask

Respirator FFP2 (EN 149)

Eye / face protection

Safety glasses with side protection shield (EN 166)

Hand protection

Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Other

Normal chemical work clothing.

Environmental exposure controls

No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form/Colour	
Powder	
grey to black	
Odour	
odourless	
Odour threshold	
No data available	
pH value	
Not applicable	
Boiling point / boiling range	
No data available	
Melting point / melting range	
Value	> 3000 °C
Method	OECD 102
Decomposition point / decomposition range	
No data available	
Flash point	
Not applicable	
Ignition temperature	
Value	> 500 °C

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Auto-ignition temperature
No data available

Oxidising properties
Inorganic substance not containing oxygen or halogen atoms.

Explosive properties
Non-combustible. Contains no chemical groups associated with explosive properties. The minimum ignition energy of fine dusts is >1 J.

Flammability (solid, gas)
The product is NOT highly flammable according to Regulation (EG) Nr. 440/2008 , method EC A.10 (flammability, solids)

Lower flammability or explosive limits
No data available

Upper flammability or explosive limits
No data available

Vapour pressure	
Comments	Solid whose melting point is > 3000°C.

Vapour density
No data available

Evaporation rate
No data available

Relative density
No data available

Density			
Value	appr.	2.2	g/cm ³
Method	DIN 51901		

Solubility in water			
Value	<	0.001	g/l

Solubility(ies)	
Comments	Graphite/ carbon is however considered being insoluble in water. The relative solubility corresponds to the solubility of impurities contained in the test substance.

Partition coefficient: n-octanol/water
No data available

Viscosity
Not applicable

9.2 Other information

Other information
No data available.

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SECTION 10: Stability and reactivity

10.1 Reactivity

No data available.

10.2 Chemical stability

No data available.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

No data available.

10.5 Incompatible materials

Fluorine; Chlorine trifluoride

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity			
No	Substance name	CAS no.	EC no.
1	Graphite	7782-42-5	231-955-3
LD50	>	2000	mg/kg bodyweight
Species	rat		
Method	OECD 423		
Source	CSR		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Acute dermal toxicity			
No data available			

Acute inhalational toxicity			
No	Substance name	CAS no.	EC no.
1	Graphite	7782-42-5	231-955-3
LC50	>	2000	mg/l
Duration of exposure		4	h
State of aggregation	Dust		
Species	rat		
Method	OECD 403		
Source	CSR		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Skin corrosion/irritation			
No	Substance name	CAS no.	EC no.
1	Graphite	7782-42-5	231-955-3
Species	rabbit		
Method	OECD 404		
Source	CSR		
Evaluation	non-irritant		

Serious eye damage/irritation			
No	Substance name	CAS no.	EC no.
1	Graphite	7782-42-5	231-955-3
Species	rabbit		
Method	OECD 405		
Source	CSR		
Evaluation	non-irritant		

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Respiratory or skin sensitisation			
No	Substance name	CAS no.	EC no.
1	Graphite	7782-42-5	231-955-3
Route of exposure		respiratory tract	
Species		mouse	
Method		OECD 429	
Source		CSR	
Evaluation		non-sensitizing	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Route of exposure		Skin	
Species		mouse	
Method		OECD 429	
Source		CSR	
Evaluation		non-sensitizing	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Germ cell mutagenicity			
No	Substance name	CAS no.	EC no.
1	Graphite	7782-42-5	231-955-3
Type of examination		Bacterial Reverse Mutation Test	
Method		OECD 471	
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Type of examination		Mammalian cell gene mutation assay	
Method		OECD 476	
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Type of examination		Mammalian chromosome aberration test	
Method		OECD 473	
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Reproduction toxicity			
No	Substance name	CAS no.	EC no.
1	Graphite	7782-42-5	231-955-3
Method		OECD 422	
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Carcinogenicity			
No	Substance name	CAS no.	EC no.
1	Graphite	7782-42-5	231-955-3
Method		Waiving	
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	

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STOT - single exposure			
No data available			
STOT - repeated exposure			
No	Substance name	CAS no.	EC no.
1	Graphite	7782-42-5	231-955-3
Route of exposure		oral	
NOAEL		813	mg/kg
Species		rat	
Method		OECD 422	
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Route of exposure		inhalational	
NOAEC		12	mg/m ³
Species		rat	
Method		OECD 412	
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Aspiration hazard			
No data available			
Delayed and immediate effects as well as chronic effects from short and long-term exposure			
Contact with the skin and eyes may cause mechanical irritation. Inhalation of dusts may irritate the respiratory tract.			

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish (acute)			
No	Substance name	CAS no.	EC no.
1	Graphite	7782-42-5	231-955-3
LC50		>	100 mg/l
Duration of exposure		96	h
Species		Danio rerio	
Method		OECD 203	
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Toxicity to fish (chronic)			
No data available			
Toxicity to Daphnia (acute)			
No	Substance name	CAS no.	EC no.
1	Graphite	7782-42-5	231-955-3
EC50		>	100 mg/l
Duration of exposure		48	h
Species		Daphnia magna	
Method		OECD 202	
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Toxicity to Daphnia (chronic)			
No data available			
Toxicity to algae (acute)			
No	Substance name	CAS no.	EC no.
1	Graphite	7782-42-5	231-955-3
EC50		>	100 mg/l
Duration of exposure		72	h
Species		Pseudokirchneriella subcapitata	
Method		OECD 201	
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	

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Toxicity to algae (chronic)

No data available

Bacteria toxicity

No data available

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	
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PBT assessment	The product is not considered to be a PBT.
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vPvB assessment	The product is not considered to be a vPvB.
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12.6 Other adverse effects

No data available.

12.7 Other information

Other information

Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

Packaging

Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN

The product is not subject to ADR/RID/ADN regulations.

14.2 Transport IMDG

The product is not subject to IMDG regulations.

14.3 Transport ICAO-TI / IATA

The product is not subject to ICAO-TI / IATA regulations.

14.4 Other information

The product is NOT highly flammable according to Regulation (EG) Nr. 440/2008 , method EC A.10 (flammability, solids)

14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

No data available.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not relevant

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SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)

In accordance with the Reach regulation (EC) 1907/2006, the product does not contain any substances that are considered as subject to listing in annex XIV, inventory of substances requiring authorisation.

REACH candidate list of substances of very high concern (SVHC) for authorisation

In accordance with article 57 and article 59 of the Reach regulation (EC) 1907/2006, this substance is not considered as subject to listing in annex XIV, inventory of substances requiring authorisation ("Authorization list").

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES

The substance is not subject to the provisions of annex XVII (restriction entries) of the Reach regulation (EC) 1907/2006.

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This substance is not subject to Part I or 2 of Annex I

National regulations

National chemical inventories

EINECS/ELINCS (European Community)	listed	
USA (TSCA)	listed	
DSL/NDSL (Canada)	DSL listed	
ENCS (Japan)	Exempted from listing	
ECL (Korea)	listed	KE-18101
AICS (Australia)	listed	
IECSC / NEPA (China)	listed	
PICCS (Philippines)	listed	
NZIoC (New Zealand)	New Zealand: not subject to the provisions of the HSNO Act.	
CSNN (Taiwan)	listed	

15.2 Chemical safety assessment

A chemical safety assessment has been carried out for this substance.

SECTION 16: Other information

Sources of key data used to compile the data sheet:

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

EC Directives 2000/39/EC, 2006/15/EC, 2009/161/EU

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

Department issuing safety data sheet

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This information is based on our present knowledge and experience.

The safety data sheet describes products with a view to safety requirements.

It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

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Prod-ID 756333