SAFETY DATA SHEET

according to US Regulation 29 CFR 1910.1200 and the Canadian HPA

AB HARPOON GRANULAR AQUATIC HERBICIDE

Version 1.2 Revision Date 2018.10.26 Print Date 2019.06.06

SECTION 1. IDENTIFICATION

Product name	:	AB HARPOON GRANULAR AQUATIC HERBICIDE
Synonyms	:	Harpoon Granular Aquatic Herbicide (EPA Reg. No. 8959-55)
PMRA Registration number	:	8959-55

Manufacturer or supplier's details

Company	:	Arch Chemicals, Inc. 1200 Bluegrass Lakes Parkway Alpharetta, GA 30004 United States of America (USA)
E-mail address	:	sds@lonza.com
Emergency telephone number	:	In case of emergency call CHEMTREC US: 1-800-424-9300, CHEMTREC WORLD-WIDE: +1-703-527-3887.

Recommended use of the chemical and restrictions on use

Recommended use	:	Water treatment chemical

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Combustible dust	:	Category 1
Serious eye damage	:	Category 1
Carcinogenicity	:	Category 1A

GHS label elements

Hazard pictograms :

Signal word	:	Danger
Hazard statements	:	May form combustible dust concentrations in air. H318 Causes serious eye damage. H350 May cause cancer.
Precautionary statements	:	**Prevention:** Avoid dust formation. P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P280 Wear protective gloves/ protective clothing/ eye protection/

face protection.
Response:
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/container in accordance with local regulation.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name / Synonyms	CAS-No.	Concentration (% w/w)
Kieselguhr, calcined	91053-39-3	25 - 35
Cupriethylenediamine solution	13426-91-0	5 - 10
Silicon dioxide	14808-60-7	1 - 3

SECTION 4. FIRST AID MEASURES

General advice : Call a poison control center or doctor for treatment advice. For 24-hour emergency medical assistance, call Arch Chemical Emergency Action Network at 1-800-654-6911. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

If inhaled : IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Move to fresh air.
Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice.
If breathing is irregular or stopped, administer artificial respiration.
Keep respiratory tract clear.

In case of skin contact : IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

After contact with skin, wash immediately with plenty of soap and water.
If on clothes, remove clothes.
In the case of skin irritation or allergic reactions see a physi-

		cian.
In case of eye contact	:	IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing.
If swallowed	:	IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	:	No information available.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray Alcohol-resistant foam Dry chemical
Specific hazards during firefighting	:	Material will not ignite or burn. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Heating or fire can release toxic gas. Do not allow run-off from fire fighting to enter drains or water courses.
Further information	:	Use water spray to cool unopened containers. In case of fire, use normal fire-fighting equipment and the personal protective equipment recommended in Section 8 to include a NIOSH approved self-contained breathing apparatus. Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Avoid dust formation. In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Use personal protective equipment as required. Evacuate personnel to safe areas.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Pick up and arrange disposal without creating dust. Shovel into suitable container for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed. Take precautionary measures against static discharges.
Advice on safe handling	:	Do not take internally. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Avoid formation of respirable particles. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	:	Store in a cool, dry and well ventilated place. Isolate from incompatible materials. Keep container closed when not in use. Avoid creating dusts. Keep container tightly closed. Keep in a well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards. To maintain product quality, do not store in heat or direct sunlight.
Materials to avoid	:	Refer to Section 10, "Incompatible Materials."
Further information on storage sta-	:	No decomposition if stored and applied as directed.

bility

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Ethylenediamine	107-15-3	TWA	10 ppm	ACGIH
		REL	10 ppm 25 mg/m3	NIOSH/GUIDE
		PEL	10 ppm 25 mg/m3	OSHA_TRANS
		TWA	10 ppm 25 mg/m3	Z1A
Kieselguhr, calcined	91053-39-3	REL	6 mg/m3	NIOSH/GUIDE
		TWA	20 millions of particles per cubic foot of air	Z3
		TWA	0.8 mg/m3	Z3
Cupriethylenediamine solution	13426-91-0	REL (Dust and mist.)	1 mg/m3 (as Cu)	NIOSH/GUIDE
		REL (Fume.)	0.1 mg/m3 (as Cu)	NIOSH/GUIDE
Silicon dioxide	14808-60-7	(Respirable fraction.)		ACGIH
		TWA (Respirable fraction.)	0.025 mg/m3	ACGIH
		REL (Respirable dust.)	0.05 mg/m3	NIOSH/GUIDE
		TWA (Respirable dust.)	0.1 mg/m3	Z1A
		TWA (Respirable.)	2.4 millions of particles per cubic foot of air	Z3
		TWA (Respirable.)	0.1 mg/m3	Z3
		TWA	0.05 mg/m3 (Respirable dust.)	OSHASP
		OSHA_ACT	0.025 mg/m3 (Respirable dust.)	OSHASP
		PEL (Respirable dust.)	0.05 mg/m3	OSHA_TRANS

Engineering measures : Local exhaust ventilation or other engineering controls are normally required when handling or using this product to keep airborne exposures below the TLV, PEL or other recommended exposure limit.

It is recommended that all dust control equipment such as

local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment.
Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).
Use only appropriately classified electrical equipment and powered industrial trucks.

Personal protective equipment

Respiratory protection : Wear a NIOSH approved respirator if levels above the exposure limits are possible.
A NIOSH approved air purifying respirator equipped with combination organic vapor and P100 prefilter. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.

In the case of dust or aerosol formation use respirator with an approved filter.
Half mask with a particle filter P2 (EN 143)

Hand protection

Material : Nitrile rubber

Remarks : Impervious gloves butyl-rubber Neoprene
Wear protective gloves. Break through time : > 480 min

Eye protection : Use chemical goggles.
Safety glasses with side-shields conforming to EN166
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Impervious clothing
butyl-rubber
Neoprene
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Dust impervious protective suit

Protective measures : Use only in an area equipped with a safety shower.

Hygiene measures : Avoid contact with skin, eyes and clothing.
When using do not eat or drink.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : granular

Colour : purple

Odour	:	Slight amine
Odour Threshold	:	no data available
pH	:	7.9 - 8.1
Melting point/freezing point	:	Not applicable
Boiling point/boiling range	:	Not applicable
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Product is not known to be flammable, combustible, pyrophoric or explosive.
Flammability (liquids)	:	no data available
Self-ignition	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	no data available
Relative vapour density	:	Not applicable
Relative density	:	no data available
Density	:	no data available
Bulk density	:	783 - 824 kg/m3
Water solubility	:	no data available
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	no data available
Decomposition temperature	:	392 °F / 200 °C
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
Explosive properties	:	no data available
Oxidizing properties	:	no data available
Minimum ignition energy	:	no data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.

Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Stable under normal conditions. Stable under recommended storage conditions. No hazards to be specially mentioned.
Conditions to avoid	:	Heat, flames and sparks. Heat
Incompatible materials	:	Strong oxidizing agents Acids chlorinated compounds Strong acids and strong bases Oxidizing agents
Hazardous decomposition products	:	Risk of decomposition. No decomposition if used as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Inhalation, skin, eyes, ingestion

Acute toxicity

Acute oral toxicity	:	(Rat): 3,129 mg/kg Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	(Rat): > 2.10 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	(Rat): > 5,000 mg/kg

Skin corrosion/irritation

Remarks: Slight Skin Irritant

Serious eye damage/eye irritation

Result: Severe eye irritation

Respiratory or skin sensitisation

Remarks: Not a Skin Sensitizer

Germ cell mutagenicity

Genotoxicity in vitro	:	Remarks: no data available

Carcinogenicity

Result: no data available

Remarks: no data available

IARC	Group 1: Carcinogenic to humans	
	Silicon dioxide	14808-60-7
OSHA	Cancer hazard.	
	Silicon dioxide	14808-60-7
NTP	Known to be human carcinogen	
	Silicon dioxide	14808-60-7
ACGIH	Suspected human carcinogen	
	Silicon dioxide	14808-60-7

Reproductive toxicity

Effects on fertility : Remarks: no data available

STOT - single exposure

Remarks: no data available

STOT - repeated exposure

Remarks: no data available

Repeated dose toxicity

Remarks: There are no known or reported effects from chronic exposure.

Aspiration toxicity

No aspiration toxicity classification

Further information

Remarks: no data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxicity to fish : Remarks: no data available

Persistence and degradability

no data available

Bioaccumulative potential

Bioaccumulation : Remarks: no data available

Components:

Silicon dioxide:

Partition coefficient: n-octanol/water : Remarks: no data available

Mobility in soil

Distribution among environmental compartments	:	Remarks: no data available

Other adverse effects

Ozone-Depletion Potential	:	Regulation: US. EPA Clean Air Act (CAA) Section 602 Ozone-Depleting Substances (40 CFR 82, Subpt. A, App A & B) Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	As a nonhazardous solid waste it should be disposed of in accordance with local, state and federal regulations. Dispose of contents/container in accordance with local regulation. Contact waste disposal services. Do not dispose of waste into sewer. The product should not be allowed to enter drains, water courses or the soil.
Contaminated packaging	:	Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

DOT

UN number	:	3077
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (Copper Ethylenediamine Complex)
Transport hazard class	:	9
Packing group	:	III
Labels	:	9
Emergency Response Guidebook Number	:	171
Environmental hazards	:	yes

TDG

UN number	:	3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Ethylenediamine Complex)
Transport hazard class	:	9
Packing group	:	III
Labels	:	9
Environmental hazards	:	yes

IATA

UN number	:	3077
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (Copper Ethylenediamine Complex)
Transport hazard class	:	9
Packing group	:	III
Labels	:	9MI
Environmental hazards	:	yes

IMDG

UN number	:	3077
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (Copper Ethylenediamine Complex)
Transport hazard class	:	9
Packing group	:	III
Labels	:	9
EmS Number 1	:	F-A
EmS Number 2	:	S-F
Environmental hazards	:	Marine pollutant: yes

ADR

UN number	:	3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Ethylenediamine Complex)
Transport hazard class	:	9
Packing group	:	III
Classification Code	:	M7
Hazard Identification Number	:	90
Labels	:	9
Environmental hazards	:	yes

RID

UN number	:	3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Ethylenediamine Complex)
Transport hazard class	:	9
Packing group	:	III
Classification Code	:	M7
Hazard Identification Number	:	90
Labels	:	9
Environmental hazards	:	yes
Special precautions for user	:	none
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	:	Not applicable

SECTION 15. REGULATORY INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals.

EPA Registration number	:	8959-55
Signal word	:	DANGER!
Hazard statements	:	Harmful if swallowed. Corrosive - causes irreversible eye damage. This pesticide is toxic to fish. This pesticide is toxic to aquatic invertebrates.

This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain label.

Read the approved label, authorized under the Pest Control Products Act, prior to using or handling the pest control product.

PMRA Registration number	:	8959-55
Hazard pictograms	:	
Signal word	:	DANGER!
Hazard statements	:	Harmful if swallowed. Corrosive - causes irreversible eye damage. This pesticide is toxic to fish. This pesticide is toxic to aquatic invertebrates.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards

See above: SECTION 2. Hazard Identification-GHS Classification

SARA 313

Components	CAS-No.	Concentration
Cupriethylenediamine solution	13426-91-0	5 - 10 %

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450.

Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

Components	CAS-No.	Concentration
Cupriethylenediamine solution	13426-91-0	>= 5 - < 10 %

US State Regulations

Massachusetts Right To Know

Components	CAS-No.
Kieselguhr, calcined	91053-39-3
Silicon dioxide	14808-60-7

Pennsylvania Right To Know

Components	CAS-No.
Kieselguhr, calcined	91053-39-3
Water	7732-18-5
Fuller's earth	8031-18-3
Cupriethylenediamine solution	13426-91-0

California Prop. 65

WARNING **Cancer - www.P65Warnings.ca.gov.**

Components	CAS-No.
Silicon dioxide	14808-60-7

The components of this product are reported in the following inventories:

TSCA : This is an EPA registered pesticide.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	US. ACGIH Threshold Limit Values
NIOSH/GUIDE	:	US. NIOSH: Pocket Guide to Chemical Hazards
OSHA_TRANS	:	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
OSHASP	:	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Z1A	:	US. OSHA Table Z-1-A (29 CFR 1910.1000)
Z3	:	US. OSHA Table Z-3 (29 CFR 1910.1000)

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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Date format : yyyy/mm/dd

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