

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations



Printing date: March 06, 2019

Revision: April 28, 2020

1 Identification

- **Product identifier**
- **Trade name:** **Byrna HD Max Projectiles**
- **Other means of identification:** OC and CS Projectiles
- **Recommended use and restriction on use**
- **Recommended use:** Self defense projectile
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
Byrna Technologies Inc.
107 Audubon Rd. Building 2, Suite 201
Wakefield, MA 01880
(260)804-9164
- **Emergency telephone number:**
ChemTel Inc.
(800) 255-3924 (North America)
(801) 1 (813)248-0585 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
Acute Tox. 4 H332 Harmful if inhaled.
Eye Irrit. 2B H320 Causes eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
Carc. 2 H351 Suspected of causing cancer. Route of exposure: Inhalation.
STOT SE 3 H335 May cause respiratory irritation.
- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**


 GHS07 GHS08
- **Signal word:** Warning
- **Hazard statements:**
H332 Harmful if inhaled.
H320 Causes eye irritation.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer. Route of exposure: Inhalation.
H335 May cause respiratory irritation.
- **Precautionary statements:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust.
P264 Wash thoroughly after handling.

(Cont'd. on page 2)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: March 06, 2019

Revision: April 28, 2020

Trade name: Byrna HD Max Projectiles

(Cont'd. of page 1)

P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing must not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection.
P302+P352	If on skin: Wash with plenty of soap and water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a poison center/doctor if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Components:**

21645-51-2	aluminium hydroxide	60-80%
9005-25-8	Starch Combustible Dust	10-30%
14807-96-6	Talc (Mg ₃ H ₂ (SiO ₃) ₄)	<10%
8023-77-6	Oleoresin Capsicum ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	<5%
1333-86-4	Carbon black ⚠ Carc. 2, H351	<5%
2698-41-1	[(2-chlorophenyl)methylene]malononitrile ⚠ Acute Tox. 3, H301; Acute Tox. 2, H330 ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	<2%
2444-46-4	N-vanillylnonanamide ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	<1%

· **Additional information:**

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.
For the wording of the listed Hazard Statements, refer to section 16.

4 First-aid measures

· **Description of first aid measures**

· **General information:**

Information is only applicable to product contents, and not to product as normally supplied. This information is applicable to damaged, leaking, or spilled product as contact with contents is possible under these conditions.

(Cont'd. on page 3)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: March 06, 2019

Revision: April 28, 2020

Trade name: Byrna HD Max Projectiles

(Cont'd. of page 2)

- **After inhalation:**
Remove victim to fresh air. Seek medical attention for severe respiratory distress.
Provide oxygen treatment if affected person has difficulty breathing.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation or rash occurs: Get medical advice/attention.
- **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed:**
May cause respiratory irritation.
Coughing
Breathing difficulty
Causes eye irritation.
Allergic reactions
Slight irritant effect on skin and mucous membranes.
- **Danger:**
Harmful if inhaled.
Suspected of causing cancer. Route of exposure: Inhalation.
Danger of impaired breathing.
Danger of disturbed cardiac rhythm.
- **Indication of any immediate medical attention and special treatment needed:**
Treat symptomatically.
Contains N-vanillynonanamide, [(2-chlorophenyl)methylene]malononitrile. May produce an allergic reaction.
Monitor circulation.
Later observation for pneumonia and pulmonary edema.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Carbon dioxide
Foam
Water spray
- **For safety reasons unsuitable extinguishing agents:** None.
- **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information:**
In case of fire involving large quantities, evacuate area and fight fire from the upwind side.

(Cont'd. on page 4)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: March 06, 2019

Revision: April 28, 2020

Trade name: Byrna HD Max Projectiles

(Cont'd. of page 3)

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

Avoid formation of dust.

Avoid breathing dust.

· Environmental precautions No special measures required.

· Methods and material for containment and cleaning up

Sweep up and place into an appropriate container.

Send for recovery or disposal in suitable receptacles.

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

· Handling

· Precautions for safe handling:

Open and handle receptacle with care.

Avoid breathing dust.

Keep out of reach of children.

· Conditions for safe storage, including any incompatibilities

· Requirements to be met by storerooms and receptacles:

Store in cool, dry conditions in well sealed receptacles.

· Information about storage in one common storage facility: Store away from foodstuffs.

· Specific end use(s) No relevant information available.

8 Exposure controls/personal protection

· Control parameters

· Components with limit values that require monitoring at the workplace:

21645-51-2 aluminium hydroxide

REL (USA)	Long-term value: 2 mg/m ³ as Al
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TLV (USA)	Long-term value: 1* mg/m ³ as Al;*as respirable fraction
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EL (Canada)	Long-term value: 10 mg/m ³
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9005-25-8 Starch

PEL (USA)	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
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REL (USA)	Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction
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(Cont'd. on page 5)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: March 06, 2019

Revision: April 28, 2020

Trade name: Byrna HD Max Projectiles

(Cont'd. of page 4)

TLV (USA)	Long-term value: 10 mg/m ³
EL (Canada)	Long-term value: 10* 3** mg/m ³ *total dust;**respirable fraction
EV (Canada)	Long-term value: 10 mg/m ³ total dust
LMPE (Mexico)	Long-term value: 10 mg/m ³ A4

14807-96-6 Talc (Mg3H2(SiO3)4)

PEL (USA)	Long-term value: 20 mppcf ppm (containing <1% Quartz)
REL (USA)	Long-term value: 2* mg/m ³ *respirable dust; and <1% Quartz
TLV (USA)	Long-term value: 2* mg/m ³ *as respirable fraction; E
EL (Canada)	Long-term value: 2 *0.1 f/cc mg/m ³ resp. *if contains asbestos : ACGIH A1, IARC 1
EV (Canada)	Long-term value: 2* mg/m ³ , 2 f/cc ppm *respirable
LMPE (Mexico)	Long-term value: 2* mg/m ³ A4, *fracción respirable

1333-86-4 Carbon black

PEL (USA)	Long-term value: 3.5 mg/m ³
REL (USA)	Long-term value: 3.5* mg/m ³ *0.1 in presence of PAHs;See Pocket Guide Apps.A+C
TLV (USA)	Long-term value: 3* mg/m ³ *inhalable fraction
EL (Canada)	Long-term value: 3 mg/m ³ IARC 2B
EV (Canada)	Long-term value: 3.5 mg/m ³
LMPE (Mexico)	Long-term value: 3* mg/m ³ A3, *fracción inhalable

2698-41-1 [(2-chlorophenyl)methylene]malononitrile

PEL (USA)	Long-term value: 0.4 mg/m ³ , 0.05 ppm
REL (USA)	Ceiling limit value: 0.4 mg/m ³ , 0.05 ppm Skin
TLV (USA)	Ceiling limit value: (0.39) NIC-0.39* mg/m ³ , (0.05) NIC-0.05* ppm *inhalable fraction and vapor;Skin
EL (Canada)	Ceiling limit value: 0.05 ppm Skin, S(D)
EV (Canada)	Ceiling limit value: 0.4 mg/m ³ , 0.05 ppm Skin
LMPE (Mexico)	Ceiling limit value: 0.05 ppm A4, PIEL

· **Exposure controls**

(Cont'd. on page 6)

Safety Data Sheet


acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: March 06, 2019

Revision: April 28, 2020

Trade name: Byrna HD Max Projectiles

(Cont'd. of page 5)

- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Avoid breathing dust.
- **Engineering controls:** Provide adequate ventilation.
- **Breathing equipment:**
Not required under normal conditions of use.
Wear appropriate NIOSH respirator when ventilation is inadequate and occupational exposure limits are exceeded.
- **Protection of hands:**
Wear protective gloves to handle contents of damaged or leaking units.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- **Eye protection:**
 Safety glasses
- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment**
No relevant information available.
- **Risk management measures** No relevant information available.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **Appearance:**
 - **Form:** Outer shell containing powder, granular, or solid materials.
 - **Color:** Green and Blue
- **Odor:** Pungent
- **Odor threshold:** Not determined.
- **pH-value:** Not applicable.
- **Melting point/Melting range:** Not determined.
- **Boiling point/Boiling range:** Not determined.
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Product is not flammable.
- **Auto-ignition temperature:** Not determined.
- **Decomposition temperature:** Not determined.
- **Danger of explosion:** Heating may cause an explosion.
- **Explosion limits**
 - **Lower:** Not determined.
 - **Upper:** Not determined.
- **Oxidizing properties:** Non-oxidizing.
- **Vapor pressure:** Not applicable.

(Cont'd. on page 7)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: March 06, 2019

Revision: April 28, 2020

Trade name: Byrna HD Max Projectiles

(Cont'd. of page 6)

- **Density:**
 - Relative density:** Not determined.
 - Vapor density:** Not applicable.
 - Evaporation rate:** Not applicable.
- **Solubility in / Miscibility with Water:** Insoluble.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity**
 - Dynamic:** Not applicable.
 - Kinematic:** Not applicable.
- **Other information** No relevant information available.

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions** Reacts with strong acids and alkali.
- **Conditions to avoid**
Excessive heat.
Prevent formation of dust.
- **Incompatible materials** Oxidizers, strong bases, strong acids
- **Hazardous decomposition products**
Under fire conditions only:
Carbon monoxide and carbon dioxide
Chlorine compounds

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
Harmful if inhaled.
May be harmful if swallowed.

· LD/LC50 values that are relevant for classification:

1333-86-4 Carbon black

Oral	LD50	10000 mg/kg (rat)
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8023-77-6 Oleoresin Capsicum

Oral	LD50	3000 mg/kg (rat)
Dermal	LD50	>2500 mg/kg (mouse)

2698-41-1 [(2-chlorophenyl)methylene]malononitrile

Oral	LD50	178 mg/kg (rat)
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(Cont'd. on page 8)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: March 06, 2019

Revision: April 28, 2020

Trade name: Byrna HD Max Projectiles

(Cont'd. of page 7)

- **Primary irritant effect:**
- **On the skin:** Based on available data, the classification criteria are not met.
- **On the eye:** Causes eye irritation.
- **Sensitization:**
Contains N-vanillylnonanamide, [(2-chlorophenyl)methylene]malononitrile. May produce an allergic reaction.

· **IARC (International Agency for Research on Cancer):**

1333-86-4	Carbon black	2B
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· **NTP (National Toxicology Program):**

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

· **Probable route(s) of exposure:**

Ingestion.
Inhalation.
Eye contact.
Skin contact.

- **Repeated dose toxicity:** Long term inhalation of product dust may be harmful.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Suspected of causing cancer. Route of exposure: Inhalation.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** May cause respiratory irritation.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity**

The product contains materials that are harmful to the environment.

2698-41-1 [(2-chlorophenyl)methylene]malononitrile

EC50	0.2-0.3 mg/kg (Oncorhynchus mykiss)
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- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

The user of this material has the responsibility to dispose of unused material, residues and containers in

(Cont'd. on page 9)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: March 06, 2019

Revision: April 28, 2020


Trade name: Byrna HD Max Projectiles

(Cont'd. of page 8)

compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, ADR/RID/ADN, IMDG · IATA 	<p>Not regulated. UN3335</p>
<ul style="list-style-type: none"> · UN proper shipping name · DOT, ADR/RID/ADN, IMDG · IATA 	<p>Not regulated. Aviation regulated solid, n.o.s. ([2-chlorophenyl]methylene]malononitrile, oleoresin capsaicin)</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT, ADR/RID/ADN, IMDG · Class 	<p>Not regulated.</p>
<ul style="list-style-type: none"> · IATA 	
	
<ul style="list-style-type: none"> · Class · Label 	<p>9 9</p>
<ul style="list-style-type: none"> · Packing group · DOT, ADR/RID/ADN, IMDG · IATA 	<p>Not regulated. III</p>
<ul style="list-style-type: none"> · Environmental hazards · Marine pollutant: 	<p>No</p>
<ul style="list-style-type: none"> · Special precautions for user 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	<p>Not applicable.</p>

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

· **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

(Cont'd. on page 10)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: March 06, 2019

Revision: April 28, 2020

Trade name: Byrna HD Max Projectiles

(Cont'd. of page 9)

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

14807-96-6	Talc (Mg ₃ H ₂ (SiO ₃) ₄)
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1333-86-4	Carbon black
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· **Chemicals known to cause developmental toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

· **IARC (International Agency for Research on Cancer):**

1333-86-4	Carbon black	2B
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· **Canadian Domestic Substances List (DSL) (Substances not listed.):**

All ingredients listed on DSL or NDSL.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bio-accumulable, Toxic

vPvB: very Persistent and very Bioaccumulative

OSHA: Occupational Safety & Health Administration

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 2: Acute toxicity – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B

Skin Sens. 1: Skin sensitisation – Category 1

Carc. 2: Carcinogenicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

(Cont'd. on page 11)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Printing date: March 06, 2019

Revision: April 28, 2020

Trade name: Byrna HD Max Projectiles

(Cont'd. of page 10)

· Sources

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor-internet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

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