

Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: 07/20/2016

Revision: 07/20/2016

1 Identification

- **Product identifier**
- **Trade name:** CS POWDER
- **Product code:** MP-CS
- **CAS Number:**
2698-41-1
- **Recommended use and restriction on use**
- **Recommended use:** Incapacitating agent.
- **Restrictions on use:** Contact manufacturer
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
NonLethal Technologies, Inc.
9419 Rt 286 Hwy W
Homer City, PA 15748
USA
+1 724-479-5100
nlt@nonlethaltechnologies.com
- **Emergency telephone number:** 1-800-255-3924 (Intl.: +1 813-248-0585) (CHEMTEL # MIS9685256)

2 Hazard(s) identification

- **Classification of the substance or mixture**
- Acute Tox. 3 H301 Toxic if swallowed.
- Acute Tox. 3 H311 Toxic in contact with skin.
- Acute Tox. 2 H330 Fatal if inhaled.
- Skin Irrit. 2 H315 Causes skin irritation.
- Eye Irrit. 2A H319 Causes serious eye irritation.
- Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin Sens. 1 H317 May cause an allergic skin reaction.
- STOT SE 3 H335 May cause respiratory irritation.

· Label elements

· GHS label elements

The substance is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms:



GHS06 GHS07 GHS08

· Signal word: Danger

· Hazard statements:

- H301+H311 Toxic if swallowed or in contact with skin.
- H330 Fatal if inhaled.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

Precautionary statements:

P260 Do not breathe dust.

P284 Wear respiratory protection.

P264 Wash thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing must not be allowed out of the workplace.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302+P352 IF ON SKIN: Wash with plenty of water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

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.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P330 Rinse mouth.

P361+P364 Take off immediately all contaminated clothing and wash it before reuse.

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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: Substances
CAS No. Description

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

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.

After inhalation:

Supply fresh air.

Seek immediate medical advice.

Provide oxygen treatment if affected person has difficulty breathing.

If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

After skin contact:

Immediately remove any clothing soiled by the product.

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- Brush off loose particles from skin.
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:**
Asthma attacks
Breathing difficulty
Coughing
Allergic reactions
Nausea
May cause gastro-intestinal irritation if ingested.
Irritating to eyes, respiratory system and skin.
 - **Danger:**
Fatal if inhaled.
Danger of impaired breathing.
Toxic if swallowed.
Toxic in contact with skin.
 - **Indication of any immediate medical attention and special treatment needed:**
Severe allergic skin reaction, bronchial spasms and anaphylactic shock are possible.
Medical supervision for at least 48 hours.
If necessary oxygen respiration treatment.
Later observation for pneumonia and pulmonary edema.
Treat skin and mucous membrane with antihistamine and corticoid preparations.
Contains [(2-chlorophenyl)methylene]malononitrile. May produce an allergic reaction.
If medical advice is needed, have product container or label at hand.
In cases of irritation to the lungs, initial treatment with corticoid steroid inhalants.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** None.
- **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information:**
Evacuate area and fight fire from from the upwind side.
Cool endangered containers with water fog.

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6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**

- Use respiratory protective device against the effects of fumes/dust/aerosol.

- Wear protective equipment. Keep unprotected persons away.

- Ensure adequate ventilation.

- Isolate area and prevent access.

- **Environmental precautions:**

- Do not allow to enter sewers/ surface or ground water.

- Inform respective authorities in case of seepage into water course or sewage system.

- **Methods and material for containment and cleaning up:**

- Pick up manually.

- 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:**

- Use only in well ventilated areas.

- Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.

- Avoid breathing dust.

- **Information about protection against explosions and fires:**

- Keep respiratory protective device available.

- **Conditions for safe storage, including any incompatibilities**

- **Storage**

- **Requirements to be met by storerooms and receptacles:**

- Avoid storage near extreme heat, ignition sources or open flame.

- **Information about storage in one common storage facility:**

- Store away from foodstuffs.

- Do not store together with oxidizing and acidic materials.

- **Further information about storage conditions:**

- Store in dry conditions.

- Store in a cool place.

- **Specific end use(s):** No relevant information available.

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8 Exposure controls/personal protection

· Control parameters

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

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 mg/m ³ , 0.05 ppm Skin
EL (Canada)	Ceiling limit value: 0.05 ppm Skin
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

· Personal protective equipment:

· General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.
 Keep away from foodstuffs, beverages and feed.
 Immediately remove all soiled and contaminated clothing.
 Wash hands before breaks and at the end of work.
 Do not inhale gases / fumes / aerosols.
 Avoid contact with the eyes and skin.

· Engineering controls: Provide adequate ventilation.

· Breathing equipment:



Combined Organic Vapor and Particulate Respirator is recommended for use during all processing activities.

· Protection of hands:



Protective gloves

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
 Protection may be required for spills.

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- **Limitation and supervision of exposure into the environment**
No relevant information available.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **Appearance:**

- **Form:** Powder

- **Color:** White

- **Odor:** Pungent

- **Odor threshold:** Not determined.

- **pH-value:** Not applicable.

- **Melting point/Melting range:** 95 °C (203 °F)

- **Boiling point/Boiling range:** 310-315 °C (590-599 °F)

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Product is not flammable.

- **Auto-ignition temperature:** Not determined.

- **Decomposition temperature:** Not determined.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits**

- **Lower:** Not determined.

- **Upper:** Not determined.

- **Oxidizing properties:** Non-oxidizing.

- **Vapor pressure at 20 °C (68 °F):** 0.000034 hPa

- **Density at 20 °C (68 °F):** 1.04 g/cm³ (8.679 lbs/gal)

- **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.

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- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions:**
Toxic fumes may be released if heated above the decomposition point.
Contact with acids releases toxic gases.
- **Conditions to avoid:** No relevant information available.
- **Incompatible materials:** No relevant information available.
- **Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Chlorine compounds
Nitrogen oxides

11 Toxicological information

· Information on toxicological effects

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

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

Oral | LD50 | 178 mg/kg (rat)

· Primary irritant effect:

- **On the skin:** Irritant to skin and mucous membranes.
- **On the eye:** Irritating effect.
- **Sensitization:** May cause sensitisation by inhalation and skin contact.

· Carcinogenic categories

· IARC (International Agency for Research on Cancer):

Substance is not listed.

· NTP (National Toxicology Program):

Substance is not listed.

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

Substance is not listed.

· Probable route(s) of exposure:

Ingestion.
Inhalation.
Eye contact.
Skin contact.

· Acute effects (acute toxicity, irritation and corrosivity):

Fatal if inhaled.
Toxic if swallowed or in contact with skin.
Irritating to eyes, respiratory system and skin.

· Repeated dose toxicity: May cause sensitisation by inhalation and skin contact.

· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

· Germ cell mutagenicity: Based on available data, the classification criteria are not met.

· Carcinogenicity: Based on available data, the classification criteria are not met.

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- **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**
Toxic for aquatic organisms

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

EC50 0.2-0.3 mg/kg (Oncorhynchus mykiss)

- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information**
- **General notes:**
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
- **Other adverse effects:** No relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
After prior treatment product has to be disposed of in an incinerator for hazardous waste adhering to the regulations pertaining to the disposal of particularly hazardous waste.
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN3448

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- **UN proper shipping name**
- **DOT, ADR, IMDG, IATA**

TEAR GAS SUBSTANCE, SOLID, N.O.S. ([2-chlorophenyl)methylene]malononitrile)

- **Transport hazard class(es)**
- **DOT**



- **Class**
- **Label**

6.1 Toxic substances
6.1

- **ADR**



- **Class**
- **Label**

6.1 (T2) Toxic substances
6.1

- **IMDG, IATA**



- **Class**
- **Label**

6.1 Toxic substances
6.1

- **Packing group**
- **DOT, ADR, IMDG, IATA**

II

- **Environmental hazards**
- **Marine pollutant:**

Yes

- **Special precautions for user**
- **Danger code (Kemler):**
- **EMS Number:**

Warning: Toxic substances
60
F-A,S-A

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

- **Transport/Additional information:**

- **IATA**



Cargo Aircraft Only.

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15 Regulatory information

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

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

Substance is not listed.

- **Section 304 (emergency release notification):**

Substance is not listed.

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

Substance is not listed.

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

Substance is not listed.

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

Substance is listed.

- **Proposition 65 (California)**

- **Chemicals known to cause cancer:**

Substance is not listed.

- **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

- **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

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

Substance is not listed.

- **Carcinogenic categories**

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

Substance is not listed.

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

Substance is not listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health):**

Substance is not listed.

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.

- **Date of preparation / last revision** 07/20/2016 / -

- **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods

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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
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
LDLo: Lowest Lethal Dose Observed
Acute Tox. 3: Acute toxicity – Category 3
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
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

• **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: 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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