

Safety Data Sheet

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

Printing date: March 29, 2016

Revision: March 29, 2016

1 Identification

- **Product identifier**
- **Trade name:** **CS Solution**
- **Product code:** 9905 (1181674)
- **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:**
Safariland, LLC
13386 International Parkway
Jacksonville, FL 32218
Customer Care (800) 347-1200
- **Information department:** Customer Care Department
- **Emergency telephone number:**
ChemTel Inc.
+1 (800)255-3924, +1 (813)248-0585



2 Hazard(s) identification

- **Classification of the substance or mixture**
- Acute Tox. 4 H302 Harmful if swallowed.
- Acute Tox. 3 H331 Toxic 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.
- Carc. 2 H351 Suspected of causing cancer.
- STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms:**



GHS06 GHS07 GHS08

- **Signal word:** Danger

- **Hazard-determining components of labeling:**

dichloromethane
[(2-chlorophenyl)methylene]malononitrile

- **Hazard statements:**

H302 Harmful if swallowed.
H331 Toxic if inhaled.

(Cont'd. on page 2)

Safety Data Sheet

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

Printing date: March 29, 2016

Revision: March 29, 2016

Trade name: CS Solution

(Cont'd. of page 1)

- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H317 May cause an allergic skin reaction.
- H351 Suspected of causing cancer.
- H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statements:






- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P284 In case of inadequate ventilation wear respiratory protection.
- P261 Avoid breathing mist/vapors/spray.
- 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.
- P363 Wash contaminated clothing before reuse.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
- P330 Rinse mouth.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- 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: Mixtures

Components:

75-09-2	dichloromethane  Carc. 2, H351  Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H336	>80%
2698-41-1	[(2-chlorophenyl)methylene]malononitrile  Acute Tox. 3, H301; Acute Tox. 2, H330  Resp. Sens. 1, H334  Acute Tox. 4, H312; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	10-20%

Additional information:

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.

(Cont'd. on page 3)

Safety Data Sheet

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

Printing date: March 29, 2016

Revision: March 29, 2016

Trade name: CS Solution

For the wording of the listed Hazard Statements refer to section 16.

(Cont'd. of page 2)

4 First-aid measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Take affected persons out into the fresh air.

- **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 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 at least 15 minutes under running water.

Seek immediate medical advice.

- **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

Irritating to eyes, respiratory system and skin.

Breathing difficulty

Dizziness

Coughing

Allergic reactions

Gastric or intestinal disorders when ingested.

Disorientation

- **Danger:**

Danger of impaired breathing.

Harmful if swallowed.

Toxic if inhaled.

Suspected of causing cancer.

May cause drowsiness or dizziness.

- **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.

(Cont'd. on page 4)

Safety Data Sheet

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

Printing date: March 29, 2016

Revision: March 29, 2016

Trade name: CS Solution

In cases of irritation to the lungs, initial treatment with cortical steroid inhalants.

(Cont'd. of page 3)

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
The product is not flammable.
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:**
In case of fire involving large quantities, evacuate area and fight fire from the upwind side.
Cool endangered containers with water fog.

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.
Keep people at a distance and stay upwind.
Particular danger of slipping on leaked/spilled product.
Ensure adequate ventilation.
Isolate area and prevent access.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
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:**
Containers of this material may be hazardous when empty since they retain product residues (dust, solids).
Prevent formation of aerosols.

(Cont'd. on page 5)

Safety Data Sheet

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

Printing date: March 29, 2016

Revision: March 29, 2016

Trade name: CS Solution

(Cont'd. of page 4)

Avoid splashes or spray in enclosed areas.

Use only in well ventilated areas.

· **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:**

Store only in the original receptacle.

Provide ventilation for receptacles.

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

Unsuitable material for receptacle: aluminium.

Unsuitable material for receptacle: steel.

· **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:**

Keep containers tightly sealed.

Store in a cool place.

· **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:**

75-09-2 dichloromethane

PEL (USA)	Short-term value: 125 ppm Long-term value: 25 ppm see 29 CFR 1910.1052
REL (USA)	See Pocket Guide App. A
TLV (USA)	Long-term value: 174 mg/m ³ , 50 ppm BEI
EL (Canada)	Long-term value: 25 ppm IARC 2B
EV (Canada)	Long-term value: 175 mg/m ³ , 50 ppm
LMPE (Mexico)	Long-term value: 50 ppm A3, IBE

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

(Cont'd. on page 6)

Safety Data Sheet

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

Printing date: March 29, 2016

Revision: March 29, 2016

Trade name: CS Solution

(Cont'd. of page 5)

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

· **Ingredients with biological limit values:**

75-09-2 dichloromethane

BEI (USA)	0.3 mg/L Medium: urine Time: end of shift Parameter: Dichloromethane (semi-quantitative)
-----------	---

· **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:** No relevant information available.

· **Breathing equipment:**



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

Wear positive pressure NIOSH or European EN149 vapor respirators when deploying product in large quantities.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· **Eye protection:**

Contact lenses should not be worn.



Safety glasses

· **Body protection:**

Protective work clothing

Protection may be required for spills.

· **Limitation and supervision of exposure into the environment**

No relevant information available.

(Cont'd. on page 7)

Safety Data Sheet

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

Printing date: March 29, 2016

Revision: March 29, 2016

Trade name: CS Solution

(Cont'd. of page 6)

· **Risk management measures**

Organizational measures should be in place for all processing activities involving this material. Specialist advice recommended.

9 Physical and chemical properties

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

· **Appearance:**

Form: Liquid

Color: Red

· **Odor:** Characteristic

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Melting point/Melting range:** Not determined.

· **Boiling point/Boiling range:** Not determined.

· **Flash point:** >94 °C (>201 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Auto-ignition temperature:** >260 °C (>500 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not self-igniting.

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

· **Explosion limits**

Lower: Not determined.

Upper: Not determined.

· **Oxidizing properties:** Not determined.

· **Vapor pressure at 20 °C (68 °F):** 400 - 500 hPa (300 - 375 mm Hg) (Estimate)

· **Density:** Not determined.

· **Relative density:** Not determined.

· **Vapor density:** Not determined.

· **Evaporation rate:** Not determined.

· **Solubility in / Miscibility with**

Water: Partly miscible.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity**

Dynamic: Not determined.

Kinematic: Not determined.

· **Other information** No relevant information available.

(Cont'd. on page 8)

Safety Data Sheet

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

Printing date: March 29, 2016

Revision: March 29, 2016

Trade name: CS Solution

(Cont'd. of page 7)

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **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:**
Reacts with certain metals.
Toxic fumes may be released if heated above the decomposition point.
Reacts with alkali, amines and strong acids.
Reacts with strong oxidizing agents.
- **Conditions to avoid:** No relevant information available.
- **Incompatible materials:** No relevant information available.
- **Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Chlorine compounds
Hydrogen chloride (HCl)
Chlorine

11 Toxicological information

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

75-09-2 dichloromethane

Oral	LD50	> 2000 mg/kg (rat)
Inhalative	LC50/4h	88 mg/l (rat)

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.
Contains [(2-chlorophenyl)methylene]malononitrile. May produce an allergic reaction.

IARC (International Agency for Research on Cancer):

75-09-2	dichloromethane	2B
---------	-----------------	----

NTP (National Toxicology Program):

75-09-2	dichloromethane	R
---------	-----------------	---

OSHA-Ca (Occupational Safety & Health Administration):

75-09-2	dichloromethane
---------	-----------------

Probable route(s) of exposure:

Ingestion.
Inhalation.

(Cont'd. on page 9)

Safety Data Sheet

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

Printing date: March 29, 2016

Revision: March 29, 2016

Trade name: CS Solution

(Cont'd. of page 8)

Eye contact.

Skin contact.

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

Harmful if swallowed.

Toxic if inhaled.

Irritating to eyes, respiratory system and skin.

Vapors have narcotic effect.

· **Repeated dose toxicity:**

May cause sensitisation by inhalation and skin contact.

Suspected of causing cancer.

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

Carc. 2

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

· **Carcinogenicity:** Suspected of causing cancer.

· **Reproductive toxicity:** Based on available data, the classification criteria are not met.

· **STOT-single exposure:**

May cause respiratory irritation.

May cause drowsiness or dizziness.

· **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**

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

EC50 | 0.2-0.3 mg/kg (Oncorhynchus mykiss)

· **Persistence and degradability** Not easily biodegradable

· **Bioaccumulative potential:** May be accumulated in organism

· **Mobility in soil:** No relevant information available.

· **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.

· **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:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

(Cont'd. on page 10)

Safety Data Sheet

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

Printing date: March 29, 2016

Revision: March 29, 2016





Trade name: CS Solution

(Cont'd. of page 9)

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.

- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· UN-Number · DOT, ADR, IMDG, IATA	UN1693
· UN proper shipping name · DOT, IATA · ADR · IMDG	Tear gas substances, liquid, n.o.s. ([[2-chlorophenyl)methylene]malononitrile, Dichloromethane) 1693 TEAR GAS SUBSTANCE, LIQUID, N.O.S. ([[2-chlorophenyl)methylene]malononitrile, DICHLOROMETHANE) TEAR GAS SUBSTANCE, LIQUID, N.O.S. ([[2-chlorophenyl)methylene]malononitrile, DICHLOROMETHANE)
· Transport hazard class(es) · DOT	
	
· Class · Label	6.1 Toxic substances 6.1
· ADR	
 	
· Class · Label	6.1 (T1) Toxic substances 6.1
· IMDG, IATA	
	
· Class · Label	6.1 Toxic substances 6.1
· Packing group · DOT, ADR, IMDG, IATA	II

(Cont'd. on page 11)

Safety Data Sheet


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

Printing date: March 29, 2016

Revision: March 29, 2016

Trade name: CS Solution

(Cont'd. of page 10)

· Environmental hazards	Not applicable.
· Special precautions for user	Warning: Toxic substances
· Danger code (Kemler):	60
· EMS Number:	F-A,S-A
· Segregation groups	Liquid halogenated hydrocarbons
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: FORBIDDEN On cargo aircraft only: 5 L
· ADR	
· Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
· IATA	
	Cargo Aircraft Only.

15 Regulatory information

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

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

None of the ingredients are listed.

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

75-09-2 | dichloromethane

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

All ingredients are listed.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

75-09-2 | dichloromethane

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

None of the ingredients are listed.

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

None of the ingredients are listed.

(Cont'd. on page 12)

Safety Data Sheet

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

Printing date: March 29, 2016

Revision: March 29, 2016

Trade name: CS Solution

(Cont'd. of page 11)

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

None of the ingredients are listed.

· **Carcinogenic categories**

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

75-09-2	dichloromethane	L
---------	-----------------	---

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

75-09-2	dichloromethane	2B
---------	-----------------	----

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

75-09-2	dichloromethane	
---------	-----------------	--

· **Canadian substance listings**

· **Canadian Domestic Substances List (DSL):**

2-chlorobenzalmononitrile: Not listed on the DSL or NDSL (Non-Domestic Substances List).

2-chlorobenzalmononitrile: Listed under individual components 2-chlorobenzaldehyde, malononitrile.

All ingredients listed on DSL or NDSL.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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** 03/29/2016 / -

· **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, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

Acute Tox. 3: Acute toxicity, Hazard Category 3

Acute Tox. 4: Acute toxicity, Hazard Category 4

Acute Tox. 2: Acute toxicity, Hazard Category 2

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

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

Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Carc. 2: Carcinogenicity, Hazard Category 2

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

· **Sources**

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

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sorinternet/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:

(Cont'd. on page 13)

Safety Data Sheet

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

Printing date: March 29, 2016

Revision: March 29, 2016

Trade name: CS Solution

(Cont'd. of page 12)

978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

ChemTel Inc.

1305 North Florida Avenue

Tampa, Florida USA 33602-2902

Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573

Website: www.chemtelinc.com