

SAFETY DATA SHEET

Revision: 2.0 Date: 29.09.2015



ACCORDING TO OSHA HCS (29 CFR 1910.1200)

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SECTION 1: IDENTIFICATION

1.1 Product identifier	
Product Name	CSM-3
Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture
REACH Registration No.	None assigned.
1.2 Relevant identified uses of the substance or mixture and uses advised against	
Identified Use(s)	Metal surface treatment products, including galvanic and electroplating products.
Uses Advised Against	None known.
1.3 Details of the supplier of the safety data sheet	
Company Identification	VISHAY MEASUREMENTS GROUP, INC. Post Office Box 27777 Raleigh, NC 27611 USA
Telephone	919-365-3800
Fax	919-365-3945
E-Mail (competent person)	mm.us@vishaypg.com
1.4 Emergency telephone number	1-800-424-9300 CHEMTREC

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture	
2.1.1 GHS Classification	Flam. Aerosol 1; H222 Acute Tox. 4; H332 Aquatic Chronic 3; H412
2.2 Label elements	GHS Classification
Product Name	CSM-3
Hazard Pictogram(s)	 
Signal Word(s)	Danger
Contains:	Trans-Dichloroethylene
Hazard Statement(s)	H222: Extremely flammable aerosol. H229: Pressurised container: May burst if heated. H332: Harmful if inhaled. H412: Harmful to aquatic life with long lasting effects.
Precautionary Statement(s)	P261: Avoid breathing spray. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312: Call a POISON CENTER/doctor if you feel unwell. P273: Avoid release to the environment.
ADD Label elements	P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P211: Do not spray on an open flame or other ignition source. P410+P412: Protect from sunlight. Do no expose to temperatures exceeding

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50°C/ 122°F.

P251: Do not pierce or burn, even after use.

Additional Information

None.

2.3 Other hazards

None.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances Not applicable.

3.2 Mixtures

GHS Classification

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard classification
Trans-Dichloroethylene	> 90	156-60-5	205-860-2	Flam. Liq. 2; H225 Acute Tox. 4; H332 Aquatic Chronic 3; H412
Carbon dioxide	1- 10	124-38-9	204-696-9	Press. Gas; H280

For full text of H/P Statements see section 16.

SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Call a POISON CENTER/doctor if you feel unwell.

Skin Contact

IF ON SKIN: Gently wash with plenty of soap and water. Remove contaminated clothing and wash clothing before reuse. If symptoms develop, obtain medical attention.

Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Flush eyes with water for at least 15 minutes. Get medical attention if eye irritation develops or persists.

Ingestion

IF SWALLOWED: Rinse mouth. Do not give anything by mouth to an unconscious person. Do not induce vomiting. If symptoms develop, obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Harmful if inhaled. Ingestion may cause irritation of the gastrointestinal tract. May cause dizziness.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing media

As appropriate for surrounding fire. Extinguish preferably with foam, carbon dioxide or dry chemical. Keep container(s) exposed to fire cool, by spraying with water.

Unsuitable extinguishing media

Do not use water jet. Do not direct a solid stream of water or foam into hot, burning pools; this may cause spattering and increase fire intensity.

5.2 Special hazards arising from the substance or mixture

Extremely flammable aerosol. Thermal decomposition will evolve toxic and corrosive vapours. Carbon dioxide, Carbon monoxide, Phosgene and Hydrogen chloride. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Sealed containers may rupture explosively if

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5.3 Advice for fire-fighters

hot.

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid breathing mist/vapours/spray. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. See Section: 8. The vapour is heavier than air; beware of pits and confined spaces.

6.2 Environmental precautions

Avoid release to the environment. Do not allow to enter drains, sewers or watercourses.

6.3 Methods and material for containment and cleaning up

Ensure suitable personal protection during removal of spillages. Use non-sparking equipment when picking up flammable spill. Adsorb spillages onto sand, earth or any suitable adsorbent material. Do NOT absorb in saw-dust or other combustible absorbents. Transfer to a lidded container for disposal or recovery. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste. Allow small spillages to evaporate provided there is adequate ventilation.

6.4 Reference to other sections

See Section: 8, 13

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure adequate ventilation. Avoid breathing mist/vapours/spray. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. See Section: 8. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Do not use sparking tools. Do not spray on an open flame or other ignition source. Pressurised container - Do not pierce or burn, even after use. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from direct sunlight. Do not reuse empty containers.

Storage temperature

Keep cool. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Storage life

Stable under normal conditions.

Incompatible materials

Isolate from reducers and flammable/ combustible materials etc in storage. Keep away from: Strong oxidising agents, Acids and Alkalis.

7.3 Specific end use(s)

Metal surface treatment products, including galvanic and electroplating products.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note
Carbon dioxide	124-38-9	5000	9000	-	-	OSHA
		5000	-	30000	-	ACGIH

Note: OSHA PELs 1910.1000 TABLE Z-1/ ACGIH TLVs

The other components listed in Section 3 do not have occupational exposure limits.

8.1.2 Biological limit value

Not established.

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8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems.

8.2.2 Individual protection measures, such as personal protective equipment (PPE)

General hygiene measures for the handling of chemicals are applicable. Avoid contact with skin, eyes or clothing. Avoid breathing mist/vapours/spray. Wash hands before breaks and after work. Keep work clothes separately. Contaminated clothing should be thoroughly cleaned. Do not eat, drink or smoke at the work place.

Eye/ face protection



Wear eye protection with side protection.

Skin protection



Hand protection: Not normally required. Wear suitable gloves if prolonged skin contact is likely. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

Body protection: Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Recommended: Wear work clothes with long sleeves.

Respiratory protection



Use only in well-ventilated areas. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid inhalation of high concentrations of vapours.

High concentrations: Use NIOSH approved respiratory protection. Recommended: Self-contained breathing apparatus.

Thermal hazards

Not applicable.

8.2.3 Environmental Exposure Controls

Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Colourless liquid
Odour	Sharp, Harsh
Odour threshold	17 ppm
pH	Not established.
Melting point/freezing point	- 50 °C
Initial boiling point and boiling range	48 °C
Flash point	2 – 4 °C
Evaporation rate	2.80
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	9.7 – 12.8 %
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative density	1.28 g/ml @ 20 °C
Solubility(ies)	Soluble in water. 6.3 mg/ml @ 25 °C
Partition coefficient: n-octanol/water	Not established.
Auto-ignition temperature	Not established.
Decomposition Temperature	Not established.
Viscosity	Not established.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2 Other information

Volatile Organic Compound Content (%): 96

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SECTION 10: STABILITY AND REACTIVITY

10.1	Stability and reactivity	Stable under normal conditions.
10.2	Chemical stability	Stable under normal conditions.
10.3	Possibility of hazardous reactions	Extremely flammable aerosol. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback.
10.4	Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep from direct sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F. Do not spray on an open flame or other ignition source. Take precautionary measures against static discharge.
10.5	Incompatible materials	Isolate from reducers and flammable/ combustible materials etc in storage. Keep away from: Strong oxidising agents, Acids and Alkalis.
10.6	Hazardous decomposition product(s)	Thermal decomposition will evolve toxic and corrosive vapours. Carbon dioxide, Carbon monoxide, Phosgene and Hydrogen chloride.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1	Information on toxicological effects (Substances in preparations / mixtures)	
	Acute toxicity	
	Ingestion	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
	Inhalation	Acute Tox. 4; Harmful if inhaled. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 11 mg/l.
	Skin Contact	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
	Skin corrosion/irritation	Based upon the available data, the classification criteria are not met.
	Serious eye damage/irritation	Based upon the available data, the classification criteria are not met.
	Respiratory or skin sensitization	Based upon the available data, the classification criteria are not met.
	Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.
	Carcinogenicity	Based upon the available data, the classification criteria are not met.
	Reproductive toxicity	Based upon the available data, the classification criteria are not met.
	STOT - single exposure	Based upon the available data, the classification criteria are not met.
	STOT - repeated exposure	Based upon the available data, the classification criteria are not met.
	Aspiration hazard	Based upon the available data, the classification criteria are not met.
	Information on likely routes of exposure	
	Inhalation	Harmful if inhaled. May cause dizziness.
	Ingestion	Ingestion may cause irritation of the gastrointestinal tract.
	Skin Contact	No additional information available.
	Eye Contact	No additional information available.
11.2	Other information	
	NTP Report on Carcinogens	None of the components are listed.
	IARC Monographs	None of the components are listed.
	Carcinogenic according to OSHA	None of the components are listed.

SECTION 12: ECOLOGICAL INFORMATION

12.1	Ecotoxicity	Aquatic Chronic 3: Harmful to aquatic life with long lasting effects. Estimated Mixture LC50 >10 ≤ 100 mg/l (Fish)
12.2	Persistence and degradability	No data for the mixture as a whole.
12.3	Bioaccumulative potential	No data for the mixture as a whole.
12.4	Mobility in soil	The product is predicted to have high mobility in soil (Highly volatile. May evaporate quickly.)
12.5	Other adverse effects	Not classified as PBT or vPvB. None of the substances in this product fulfil the criteria for being regarded as a PBT or vPvB substance.

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SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods** This material and its container must be disposed of as hazardous waste. Dispose of contents in accordance with local, state or national legislation. Containers of this material may be hazardous when empty since they retain product residue. Dispose of wastes in an approved waste disposal facility. Do not reuse empty containers. Do not pierce or burn container, even after use.

SECTION 14: TRANSPORT INFORMATION

- | | ADR/RID / IMDG / IATA/ICAO |
|--|---|
| 14.1 UN number | UN 1950 |
| 14.2 UN proper shipping name | AEROSOLS, flammable |
| 14.3 Transport hazard class(es) | 2 |
| 14.4 Packing group | None assigned. |
| 14.5 Environmental hazards | Not classified as a Marine Pollutant. / Environmentally hazardous substance |
| 14.6 Special precautions for user | See Section: 2 |
| 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |
| 14.8 Additional Information | Recommended: Road/Rail/Sea transport only. |

SECTION 15: REGULATORY INFORMATION

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- 15.1.1 OSHA Occupational Safety and Health Standards** OSHA list of highly hazardous chemicals, toxics and reactives. None.
Not listed.
- 15.1.2 European regulations** Aerosol is packaged in accordance with Aerosol Dispensers Directive Council Directive 75/324/EEC, as amended. Inverted epsilon labelling '3' certifies conformity.
- Substance(s) of Very High Concern (SVHCs) None.
Authorisations and/or Restrictions On Use None.
Wassergefährdungsklasse (Germany) Water hazard class: 2
- 15.2 Chemical Safety Assessment** Not available.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

Version 1.0
Revision date 29.09.15
Date of preparation 29.09.15

References: Existing Safety Data Sheet (SDS), Harmonised Classification(s) for Trans-Dichloroethylene (CAS# 156-60-5), and the Classification and Labelling Inventory for Carbon dioxide (CAS# 124-38-9).

GHS Classification of the substance or mixture	Classification Procedure
Flam. Aerosol 1; H222	In accordance with Regulation (EC) No. 1272/2008 (CLP) 2.3.2.2
Acute Tox. 4; H332	Acute Toxicity Estimate Mixture Calculation
Aquatic Chronic 3; H412	Summation Calculation

LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists
IARC: International Agency for Research on Cancer
LTEL: Long Term Exposure Limit
NTP: National Toxicology Program

PBT: Persistent, Bioaccumulative and Toxic
PELs: Permissible Exposure Limits
STEL: Short Term Exposure Limit
TLVs: Threshold limit values

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OSHA: The Occupational Safety & Health Administration

vPvB: very Persistent and very Bioaccumulative

Hazard Statement(s)

H222: Extremely flammable aerosol.

H332: Harmful if inhaled.

H229: Pressurised container: May burst if heated.

H412: Harmful to aquatic life with long lasting effects.

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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Annex to the extended Safety Data Sheet (eSDS)

No information available.

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