

SAFETY DATA SHEET

Revision: 1.0 Date: 21.10.2015



ACCORDING TO OSHA HCS (29 CFR 1910.1200)

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SECTION 1: IDENTIFICATION

1.1 Product identifier	
Product Name	SR-4 Cement
Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture
1.2 Relevant identified uses of the substance or mixture and uses advised against	
Identified Use(s)	Adhesives.
Uses Advised Against	For professional users only.
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. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336
2.2 Label elements	
Product Name	SR-4 Cement
Hazard Pictogram(s)	 
Signal Word(s)	Danger
Contains:	Methyl ethyl ketone
Hazard Statement(s)	H225: Highly flammable liquid and vapour. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness.
Precautionary Statement(s)	P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261: Avoid breathing vapours. P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313: If eye irritation persists: Get medical advice/attention. P312: Call a POISON CENTER/doctor if you feel unwell.
OSHA Defined Hazards	None.
2.3 Other hazards	Repeated exposure may cause skin dryness or cracking.

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 **Substances** Not applicable.

3.2 **Mixtures** Substances in preparations / mixtures

GHS Classification

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard classification
Methyl ethyl ketone	63.4	78-93-3	201-159-0	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 EUH066
Acetic acid, ethenyl ester, copolymer with chloroethene	6.1 – 10.2	9003-22-9	-	Not classified
Polyurethane Polymer (Hexanedioic acid, polymer with 1,4-butanediol, 2,2-dimethyl-1,3-propanediol and 1,1'-methylenebis[4-isocyanatobenzene])	6.1 – 10.2	56815-45-3	-	Not classified
4-Methylpentan-2-one	10.1	108-10-1	203-550-1	Flam. Liq. 2; H225 Eye Irrit. 2; H319 Acute Tox. 4; H332 STOT SE 3; H335
Methanol	2	67-56-1	200-659-6	Flam. Liq. 2; H225 Acute Tox. 3; H301 Acute Tox. 3; H311 Acute Tox. 3; H331 STOT SE 1; H370 (SCL: C ≥ 10%) STOT SE 2; H371 (SCL: 3% ≤ C < 10%)
Lactol spirits (Solvent naphtha (petroleum), light aliph.)	1.9	64742-89-8	265-192-2	Asp. Tox. 1; H304 *
Toluene	1.8	108-88-3	203-625-9	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Repr. 2; H361d STOT RE 2; H373
Isobutyl isobutyrate	0.5	97-85-8	202-612-5	Flam. Liq. 3; H226

*Contains: < 0.1 %W/W benzene

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

SECTION 4: FIRST AID MEASURES



4.1 Description of first aid measures

Self-protection of the first aider

Inhalation

Skin Contact

If it is suspected that fumes are still present, the responder should wear an appropriate mask or self-contained breathing apparatus. Wear suitable protective clothing.

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. If breathing is laboured, oxygen should be administered by qualified personnel. Call a POISON CENTER/doctor if you feel unwell.

Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned. If skin irritation or rash occurs: Get medical advice/attention.

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Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	IF SWALLOWED: Rinse mouth. Do not give anything by mouth to an unconscious person. Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration into the lungs. If aspiration is suspected obtain immediate medical attention.
4.2 Most important symptoms and effects, both acute and delayed	Causes serious eye irritation. May cause drowsiness or dizziness. Repeated exposure may cause skin dryness or cracking. May be harmful if swallowed and enters airways.
4.3 Indication of any immediate medical attention and special treatment needed	Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media	As appropriate for surrounding fire. Extinguish preferably with foam, carbon dioxide or dry chemical.
Suitable Extinguishing media	Do not use water jet. Direct water jet may spread the fire.
Unsuitable extinguishing media	
5.2 Special hazards arising from the substance or mixture	Highly flammable liquid and vapour. May decompose in a fire giving off toxic fumes. Oxides of carbon. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. May polymerise on prolonged heating. Containers may explode when involved in a fire.
5.3 Advice for fire-fighters	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. Avoid contact with skin, eyes or clothing. Avoid breathing vapours. Wear respiratory protection. 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 (including respiratory protection) during removal of spillages. Stop leak if safe to do so. Use non-sparking equipment when picking up flammable spill. Adsorb spillages onto sand, earth or any suitable adsorbent material. Do not absorb spillage in sawdust or other combustible material. 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.
6.4 Reference to other sections	See Section: 8, 13

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling	Avoid contact with skin, eyes or clothing. Avoid breathing vapours. Ensure adequate ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Use personal protective equipment as required. See Section: 8. 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	Ground/bond container and receiving equipment. Keep only in original container. Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ambient.
Storage temperature	Stable under normal conditions.
Storage life	Keep away from: Oxidizing agents, Reducing agents, Strong Acids (Nitric acid),
Incompatible materials	

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7.3 Specific end use(s)

Amines, Ammonia, strong bases and Alkalis.
See Section: 1.2

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
Methyl ethyl ketone	78-93-3	200	590	300*	885*	NIOSH
		200	590	-	-	OSHA
		200	-	300	-	ACGIH
4-Methyl-pentan-2-one	108-10-1	50	205	75*	300*	NIOSH
		100	410	-	-	OSHA
		20	-	75	-	ACGIH, A3
Methanol	67-56-1	200	260	250*	325*	NIOSH
		200	260	-	-	OSHA
		200	-	250	-	ACGIH, Skin
Toluene	108-88-3	100	375	150*	560*	NIOSH
		200	-	300	-	OSHA
		20	-	-	-	ACGIH

Note: OSHA PELs 1910.1000 TABLE Z-1 and Z-2 / NIOSH RELs / ACGIH TLVs

*15 minutes average value

A3: Confirmed animal carcinogen with unknown relevance to humans.

Skin: Potential significant exposure by the cutaneous route.

Occupational exposure limits have not been established for the other components listed in Section 3.

8.1.2 Biological limit value

SUBSTANCE	CAS No.	Determinant	Biological Exposure Indices	Sampling Time	Note
Methyl ethyl ketone	78-93-3	Methyl ethyl ketone in urine	2 mg/l	End of Shift	Ns
4-Methyl-pentan-2-one	108-10-1	4-Methyl-pentan-2-one in urine	1 mg/l	End of Shift	-
Methanol	67-56-1	Methanol in urine	15 mg/l	End of Shift	B, Ns
Toluene	108-88-3	Toluene in blood	0.02 mg/l	Prior to last shift of workweek	-
		Toluene in urine	0.03 mg/l	End of Shift	-
		o-Cresol in urine (with hydrolysis)	0.03 mg/g Creatinine	End of Shift	B

Source: 2015 ACGIH Biological Exposure Indices (BEIs)

Biological Exposure Indices have not been established for the other components listed in Section 3.

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. Local exhaust recommended.

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. Wash hands before breaks and after work. Keep work clothes separately. Do not eat, drink or smoke at the work place.

Eye/ face protection

Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection. Have available eyewash bottle with clean water.

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Skin protection



Respiratory protection



Thermal hazards

Hand protection: Wear impervious gloves. Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Recommended: Neoprene.

Body protection: Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protection. Use NIOSH approved respiratory protection.

Long Term Exposure: A full facepiece respirator with organic vapor cartridge may be worn.

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	The following information is based on a consideration of the properties of the main components of this mixture. (Methyl ethyl ketone CAS# 78-93-3)
Appearance	Colourless liquid
Odour	Aromatic odor
Odour threshold	Not available.
pH	Not established.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	80 °C (176 °F) (CAS# 78-93-3)
Flash point	-9 °C (16 °F) [Closed cup] (CAS# 78-93-3)
Evaporation rate	>1 (BuAC = 1)
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Flammable Limits (Lower) (%v/v): 1.8 (CAS# 78-93-3) Flammable Limits (Upper) (%v/v): 6.9 (CAS# 78-93-3) 78 mm Hg (CAS# 78-93-3)
Vapour pressure	>1 (Air = 1)
Vapour density	Approximately 0.81 (Water = 1)
Relative density	Slightly soluble in: Water
Solubility(ies)	Not available.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
9.2 Other information	Volatile Organic Compound Content (%): 60 - 70

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	Highly flammable liquid and vapour. The vapour may be invisible, heavier than air and spread along ground. May polymerise on prolonged heating.
10.4 Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
10.5 Incompatible materials	Keep away from: Oxidizing agents, Reducing agents, Strong Acids (Nitric acid), Amines, Ammonia, strong bases and Alkalis.
10.6 Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Oxides of carbon.

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SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects (Substances in preparations / mixtures)

Acute toxicity

Ingestion

Based on available data, the classification criteria are not met.
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.

Inhalation

Based on available data, the classification criteria are not met.
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 20.0 mg/l.

Skin Contact

Based on available data, the classification criteria are not met.
Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.

Skin corrosion/irritation

Repeated exposure may cause skin dryness or cracking.

Serious eye damage/irritation

Eye Irrit. 2: Causes serious eye irritation.

Respiratory or skin sensitization

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

Germ cell mutagenicity

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

Carcinogenicity

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

Reproductive toxicity

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

STOT - single exposure

STOT SE 3: May cause drowsiness and 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.

11.2 Other information

Likely routes of exposure:

Inhalation

Yes

Ingestion

Accidental

Skin Contact

Yes

NTP Report on Carcinogens

None of the components are listed.

IARC Monographs

4-Methyl-pentan-2-one (CAS# 108-10-1): Group 2B – Possibly carcinogenic to humans.

Regulated as a Carcinogen by OSHA

None of the components are listed.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Not harmful to aquatic organisms. Based on available data, the classification criteria are not met.

Estimated Mixture LC50 >100 mg/l (Fish)

12.2 Persistence and degradability

Part of the components are poorly biodegradable.

12.3 Bioaccumulative potential

The product has low potential for bioaccumulation.

12.4 Mobility in soil

The product is predicted to have moderate mobility in soil (Slightly soluble in: Water).

12.5 Other adverse effects

Not classified as PBT or vPvB.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste. Dispose of wastes in an approved waste disposal facility. Containers of this material may be hazardous when empty since they retain product residue. Dispose of contents in accordance with local, state or national legislation. Recycle only completely emptied packaging.

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SECTION 14: TRANSPORT INFORMATION

	ADR/RID / IMDG / IATA
14.1 UN number	UN 1993
14.2 UN Proper Shipping Name	FLAMMABLE LIQUIDS N.O.S. (Methyl ethyl ketone and 4-Methyl-pentan-2-one)
14.3 Transport hazard class(es)	3
14.4 Packing group	II
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	None.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
15.1.1 U.S. Federal Regulations	
TSCA Inventory Status	All of the components are listed in the Toxic Substance Control Act Chemical Substance Inventory (TSCA).
15.1.2 US State Regulations	
California State Proposition 65 List	Methanol: Maximum Allowable Dose Level: 47000 µg/day (inhalation), 23000 µg/day (oral). Toluene: Maximum Allowable Dose Level: 7000 µg/day.
15.1.2 European regulations	
Substance(s) of Very High Concern (SVHCs)	None.
Authorisations and/or Restrictions On Use	For professional users only. REACH: ANNEX XVII restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles. Toluene: Entry number: 48. Restricted as a substance or in mixtures > 0.1% w/w used in adhesives or spray paints for the general public.
Wassergefährdungsklasse (Germany)	Water hazard class: 1
15.2 Chemical Safety Assessment	Not available.

SECTION 16: OTHER INFORMATION

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

Version 1.0
Date of preparation 21.10.15

References: Existing Safety Data Sheet (SDS), Harmonised Classification(s) for Methyl ethyl ketone (CAS# 78-93-3), 4-Methylpentan-2-one (CAS# 108-10-1), Methanol (CAS# 67-56-1), Solvent naphtha (petroleum), light aliph. (Lactol spirits) (CAS# 64742-89-8) and Toluene (CAS# 108-88-3). Existing ECHA registration(s) for Methyl ethyl ketone (CAS# 78-93-3), 4-Methylpentan-2-one (CAS# 108-10-1), Methanol (CAS# 67-56-1), Solvent naphtha (petroleum), light aliph. (Lactol spirits) (CAS# 64742-89-8) and Toluene (CAS# 108-88-3), and the Classification and Labelling Inventory for Acetic acid, ethenyl ester, copolymer with chloroethene ((CAS# 9003-22-9) and Isobutyl isobutyrate (CAS# 97-85-8).

GHS Classification of the substance or mixture	Classification Procedure
Flam. Liq. 2; H225	Estimated Flash Point / Estimated Boiling Point (°C)
Eye Irrit. 2; H319	Threshold Calculation
STOT SE 3; H336	Threshold Calculation

LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists
BEIs: Biological Exposure Indices
IARC: International Agency for Research on Cancer
LTEL: Long Term Exposure Limit
NIOSH: National Institute for Occupational Safety and Health
NTP: National Toxicology Program

PBT: Persistent, Bioaccumulative and Toxic
PELs: Permissible Exposure Limits
RELs: Recommended Exposure limits
STEL: Short Term Exposure Limit
TLVs: Threshold limit values
vPvB: very Persistent and very Bioaccumulative

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OSHA: The Occupational Safety & Health Administration

Notes

B: Background – The determinant may be present in biological specimens collected from subjects who have not been occupationally exposed, at a concentration which could affect interpretation of the result. Such background concentrations are incorporated in the BEI value.

Ns: Nonspecific – The determinant is nonspecific, since it is also observed after exposure to other chemicals.

Hazard Statement(s)

H225: Highly flammable liquid and vapour.

H226: Flammable liquid and vapour.

H301: Toxic if swallowed.

H304: May be fatal if swallowed and enters airways.

H311: Toxic in contact with skin.

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H331: Toxic if inhaled.

H332: Harmful if inhaled.

H335: May cause respiratory irritation.

H336: May cause drowsiness or dizziness.

H361d: Suspected of damaging the unborn child.

H370: Causes damage to organs.

H371: May cause damage to organs.

H373: May cause damage to organs through prolonged or repeated exposure.

EUH066: Repeated exposure may cause skin dryness or cracking.

SCL: Specific Concentration Limit

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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