SAFETY DATA SHEET



1. Identification

Product identifier Arizona DRO/GRO Range Calibration Standards Mixture

Other means of identification

Item M-CSAZ2X5

Recommended use For Laboratory Use Only

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Chem Service, Inc.
Address 660 Tower Lane

West Chester, PA 19380

United States

Telephone Toll Free 800-452-9994

Direct 610-692-3026

Website www.chemservice.com
E-mail info@chemservice.com

Emergency phone number Chemtrec US 800-424-9300

Chemtrec outside US +1 703-527-3887

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Acute toxicity, oral Category 4

Skin corrosion/irritation

Serious eye damage/eye irritation

Category 2

Carcinogenicity

Category 2

Specific target organ toxicity, repeated

Category 2

exposure

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. Suspected of causing

cancer. May cause damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read

and understood. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye protection/face protection. Wear protective

gloves/protective clothing/eye protection/face protection.

Response If swallowed: Call a poison center/doctor if you feel unwell. If on skin: Wash with plenty of water. If

in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Rinse mouth.

If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical

advice/attention. Take off contaminated clothing and wash before reuse.

Storage Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

1.8% of the mixture consists of component(s) of unknown acute oral toxicity.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%	
Methylene chloride	Dichloromethane	75-09-2	97 - 98	
n-Decane		124-18-5	0.2	
n-Docosane		629-97-0	0.2	
n-Dodecane		112-40-3	0.2	
n-Dotriacontane		544-85-4	0.2	
n-Eicosane		112-95-8	0.2	
n-Hexacosane		630-01-3	0.2	
n-Hexadecane		544-76-3	0.2	
n-Octacosane		630-02-4	0.2	
n-Octadecane		593-45-3	0.2	
n-Tetracosane		646-31-1	0.2	
n-Tetradecane		629-59-4	0.2	
n-Triacontane		638-68-6	0.2	

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get

medical advice/attention. Wash contaminated clothing before reuse.

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if Eye contact present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Get medical advice/attention if you feel unwell.

Most important symptoms/effects, acute and

delayed

Ingestion

Indication of immediate medical attention and special treatment needed

General information

Dizziness. Nausea. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media

Unsuitable extinguishing

media

Specific hazards arising from the chemical

Special protective equipment and precautions for firefighters

Fire fighting

Specific methods General fire hazards

equipment/instructions

During fire, gases hazardous to health may be formed.

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Do not use water jet as an extinguisher, as this will spread the fire.

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Move containers from fire area if you can do so without risk.

Use standard firefighting procedures and consider the hazards of other involved materials.

No unusual fire or explosion hazards noted.

Material name: Arizona DRO/GRO Range Calibration Standards Mixture M-CSAZ2X5 Version #: 01 Issue date: 05-25-2016

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Provide adequate ventilation. Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value	
Methylene chloride (CAS 75-09-2)	STEL	125 ppm	
,	TWA	25 ppm	
US. ACGIH Threshold Limit Value	s		
Components	Туре	Value	
Methylene chloride (CAS 75-09-2)	TWA	50 ppm	

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Methylene chloride (CAS 75-09-2)	0.3 mg/l	Dichlorometha ne	Urine	*

^{* -} For sampling details, please see the source document.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove

supplier.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid.

Color Not available.

Odor Not available.
Odor threshold Not available.
pH Not available.

Melting point/freezing point -139 °F (-95 °C) estimated
Initial boiling point and boiling 103.55 °F (39.75 °C) estimated

range

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower

15.5 % estimated

(%)

Flammability limit - upper

66.4 % estimated

(%)

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure580 hPa estimatedVapor densityNot available.Relative densityNot available.

Solubility(ies)

Solubility (water)Not available.Partition coefficientNot available.

(n-octanol/water)

Auto-ignition temperature 1033 °F (556.11 °C) estimated

Decomposition temperatureNot available. **Viscosity**Not available.

Other information

Density 1.32075 g/cm3 estimated

Explosive properties Not explosive.

Oxidizing properties Not oxidizing.

Percent volatile 97.6 % estimated

Specific gravity 1.32 estimated

VOC (Weight %) 97.6 % estimated

10. Stability and reactivity

ReactivityThe product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stabilityMaterial is stable under normal conditions.Possibility of hazardousHazardous polymerization does not occur.

reactions

Contact with incompatible materials.

Incompatible materials Strong oxidizing agents.

incompatible materials Strong oxidizing agents

Hazardous decomposition

Conditions to avoid

No hazardous decomposition products are known.

products

11. Toxicological information

Information on likely routes of exposure

Inhalation May cause damage to organs through prolonged or repeated exposure by inhalation.

Skin contact Causes skin irritation.

Eye contact Causes serious eye irritation.

Ingestion Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Dizziness. Nausea. Severe eye irritation. Symptoms may include stinging, tearing, redness,

swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Components	Species	Test Results
Methylene chloride (CAS 75	-09-2)	
<u>Acute</u>		
Dermal		
LD50	Rat	> 2000 mg/kg, Days
Inhalation		
LC50	Guinea pig	11600 ppm, 6 Hours
		40.2 mg/l, 6 Hours
Vapor	M	40000 (. 0 . 7)
LC50	Mouse	49000 mg/m3, 7 Hours
LC50	Mouse	14400 ppm, 7 Hours
		56.23 mg/l, 7 Hours
		51.5 mg/l, 2 Hours
		49.1 mg/l, 6 Hours
	Rat	2000 mg/l, 15 Minutes
		88 mg/l, 900 Days
		79 mg/l, 2 Hours
		52 mg/l, 6 Hours
LD50	Mouse	16000 ppm, 7 Hours
Oral		
LD50	Rat	> 2000 mg/kg
n-Decane (CAS 124-18-5)		
<u>Acute</u>		
Dermal	B 11."	0400 # 0444
LD50	Rabbit	>= 3160 mg/kg, 24 Hours
	Rat	> 2000 mg/kg, 24 Hours
Inhalation	Marila	
LC50	Monkey	>= 11160 mg/m3
	Mouse	72.3 mg/l, 2 Hours
Vapor	Det	> 5000 mm/s=2 0 H
LC50	Rat	> 5000 mg/m3, 8 Hours
		> 4951 mg/m3, 4 Hours
		> 41 ppm, 8 Hours
Oral	B.4	. 5000 //
LD50	Rat	> 5000 mg/kg

Components	Species	Test Results
n-Dodecane (CAS 112-40-3)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	>= 3160 mg/kg, 24 Hours
	Rat	> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Monkey	>= 11160 mg/m3
Vapor		
LC50	Rat	> 5000 mg/m3, 8 Hours
		> 4951 mg/m3, 4 Hours
		> 41 ppm, 8 Hours
Oral		
LD50	Rat	> 5000 mg/kg
n-Eicosane (CAS 112-95-8)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 Hours
	Rat	> 2000 mg/kg, 24 Hours
Inhalation		
Aerosol		
LC50	Rat	> 5266 mg/m3, 4 Hours
n-Hexadecane (CAS 544-76-3)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 Hours
	Rat	> 2000 mg/kg, 24 Hours
Inhalation		
Aerosol		
LC50	Rat	> 5266 mg/m3, 4 Hours
n-Octadecane (CAS 593-45-3)		
Acute		
Dermal LD50	Rabbit	> 2000 mg/kg, 24 Hours
LD30		
	Rat	> 2000 mg/kg, 24 Hours
Inhalation		
<i>Aerosol</i> LC50	Rat	> 5266 mg/m3, 4 Hours
n-Tetradecane (CAS 629-59-4)	···	· Ozoo mg/mo, + mouro
Acute		
<u>Acute</u> Dermal		
LD50	Rabbit	>= 3160 mg/kg, 24 Hours
	Rat	> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Monkey	>= 11160 mg/m3
Vapor	··· <i>j</i>	
LC50	Rat	> 5000 mg/m3, 8 Hours
- 		> 4951 mg/m3, 4 Hours
		> 41 ppm, 8 Hours
		- τι ρριτι, ο πουισ

Species Test Results Components

Oral

LD50 Rat > 5000 mg/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye

Causes serious eve irritation.

irritation

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

This product is not expected to cause skin sensitization. Skin sensitization

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are

mutagenic or genotoxic.

Suspected of causing cancer. Carcinogenicity IARC Monographs. Overall Evaluation of Carcinogenicity

> Methylene chloride (CAS 75-09-2) 2A Probably carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Methylene chloride (CAS 75-09-2) Reasonably Anticipated to be a Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Methylene chloride (CAS 75-09-2) Cancer

This product is not expected to cause reproductive or developmental effects. Reproductive toxicity

Specific target organ toxicity -

Not classified.

single exposure

Specific target organ toxicity -

repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Not an aspiration hazard. **Aspiration hazard**

May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may **Chronic effects**

be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

The product is not classified as environmentally hazardous. However, this does not exclude the **Ecotoxicity**

possibility that large or frequent spills can have a harmful or damaging effect on the environment.

	Species	Test Results
5-09-2)		
EC50	Water flea (Daphnia magna)	1250 mg/l, 48 hours
LC50	Fathead minnow (Pimephales promelas)	140.8 - 277.8 mg/l, 96 hours
LC50	Sheepshead minnow (Cyprinodon variegatus)	> 500 mg/l, 96 hours
0)		
LC50	Sheepshead minnow (Cyprinodon variegatus)	> 500 mg/l, 96 hours
	EC50 LC50 LC50	5-09-2) EC50 Water flea (Daphnia magna) LC50 Fathead minnow (Pimephales promelas) LC50 Sheepshead minnow (Cyprinodon variegatus) 0) LC50 Sheepshead minnow (Cyprinodon

^{*} Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Methylene chloride 1.25 5.01 n-Decane 8.25 n-Hexadecane 7.2 n-Tetradecane

No data available. Mobility in soil

^{*} Estimates for product may be based on additional component data not shown.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of **Disposal instructions**

contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste

disposal company.

Waste from residues / unused

products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see:

Disposal instructions).

Since emptied containers may retain product residue, follow label warnings even after container is Contaminated packaging

emptied. Empty containers should be taken to an approved waste handling site for recycling or

disposal.

14. Transport information

DOT

UN number UN1593

UN proper shipping name Transport hazard class(es)

Dichloromethane, solution (Methylene chloride RQ = 1025 LBS)

Class 6.1(PGIII)

Subsidiary risk Label(s) 6.1 Packing group Ш

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IB3, IP8, N36, T7, TP2 Special provisions

Packaging exceptions 153 203 Packaging non bulk Packaging bulk 241

IATA

UN number UN1593

UN proper shipping name Transport hazard class(es) Dichloromethane solution (Methylene chloride)

Class 6.1(PGIII)

Subsidiary risk Ш Packing group **Environmental hazards** No. **ERG Code** 61

Other information

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Passenger and cargo

aircraft

Allowed.

Cargo aircraft only Allowed.

IMDG

UN number UN1593

UN proper shipping name

DICHLOROMETHANE SOLUTION (Methylene chloride)

Transport hazard class(es)

Class 6.1(PGIII)

Subsidiary risk Packing group Ш

Environmental hazards

Marine pollutant No. **EmS** F-A. S-A

Special precautions for user Read safety instructions, SDS and emergency procedures before handling. Not established.

Transport in bulk according to Annex II of MARPOL 73/78 and

the IBC Code



IATA; IMDG



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication

Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Methylene chloride (CAS 75-09-2)

Listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Methylene chloride (CAS 75-09-2) Cancer

Heart

Central nervous system

Liver Skin irritation Eye irritation

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes

Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous No

chemical

SARA 313 (TRI reporting)

Chemical nameCAS number% by wt.Methylene chloride75-09-297 - 98

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Methylene chloride (CAS 75-09-2)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act Not regulated.

(SDWA)

US state regulations

US - New Jersey RTK - Substances: Listed substance

Methylene chloride (CAS 75-09-2)

n-Decane (CAS 124-18-5)

US - Pennsylvania RTK - Hazardous Substances: Special hazard

Methylene chloride (CAS 75-09-2)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd.

(a))

Methylene chloride (CAS 75-09-2)

US. Massachusetts RTK - Substance List

Methylene chloride (CAS 75-09-2)

US. New Jersey Worker and Community Right-to-Know Act

Methylene chloride (CAS 75-09-2)

US. Pennsylvania RTK - Hazardous Substances

Methylene chloride (CAS 75-09-2)

n-Decane (CAS 124-18-5)

US. Pennsylvania Worker and Community Right-to-Know Law

Methylene chloride (CAS 75-09-2)

n-Decane (CAS 124-18-5)

US. Rhode Island RTK

Methylene chloride (CAS 75-09-2)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Methylene chloride (CAS 75-09-2)

Listed: April 1, 1988

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

^{*}A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other information, including date of preparation or last revision

Issue date 05-25-2016

Version # 0°

NFPA ratings Health: 2

Flammability: 0 Instability: 0

Material name: Arizona DRO/GRO Range Calibration Standards Mixture M-CSAZ2X5 Version #: 01 Issue date: 05-25-2016

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Disclaimer

The above information is believed to be correct on the date it was last revised and must not be considered all inclusive. The information has been obtained only by a search of available literature and is only a guide for handling the chemicals. OSHA regulations require that if other hazards become evident, an upgraded SDS must be made available to the employee within three months. RESPONSIBILITY for updates lies with the employer and not with CHEM SERVICE, Inc.

Persons not specifically and properly trained should not handle this chemical or its container. This product is furnished FOR LABORATORY USE ONLY! Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticide products, food additives or as household chemicals.

This Safety Data Sheet (SDS) is intended only for use with Chem Service, Inc. products and should not be relied on for use with materials from any other supplier even if the chemical name(s) on the product are identical! Whenever using an SDS for a solution or mixture the user should refer to the SDS for every component of the solution or mixture. Chem Service warrants that this SDS is based upon the most current information available to Chem Service at the time it was last revised. THIS WARRANTY IS EXCLUSIVE, AND CHEM SERVICE, INC. MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. This SDS is provided gratis and CHEM SERVICE, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR CONTINGENT DAMAGES.

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