

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 26/03/2015 Revision date: 08/05/2018 Supersedes: 26/03/2015 Version: 1.1 EM-1725-B

SECTION 1: Identification of the	substance/mixture and of the company/undertaking
1.1. Product identifier	substance/mixture and of the company/undertaking
Product form	: Mixtures
Product name	 MIAULES CHLOROBENZENE COCKTAIL TETRA/PENTA/HEXA ISOMERS (13C6, 99%) 100 UG/ML IN METHANOL
Product code	: EM-1725-B
1.2. Relevant identified uses of the	substance or mixture and uses advised against
1.2.1. Relevant identified uses	
Industrial/Professional use spec	: For professional use only
1.2.2. Uses advised against	
No additional information available	
1.3. Details of the supplier of the sa	fety data sheet
Cambridge Isotope Laboratories, Inc. 50 Frontage Road Andover, MA 01810 USA	
USA: 1-800-322-1174 Int: 1-978-749-800 cilsales@isotope.com www.isotope.com	0
Emergency telephone number	
Emergency numbers:	
Chemtrec: 1-800-424-9300 (24 hours) International: 1-703-741-5970 (24 hours)	
SECTION 2: Hazards identification	on
2.1. Classification of the substance	or mixture
Classification according to Regulation (E	EC) No. 1272/2008 [CLP]
Flam. Liq. 2 H225	
Acute Tox. 3 (Oral) H301	
Acute Tox. 3 (Dermal) H311	
Acute Tox. 3 (Inhalation:vapour) H331	
Skin Irrit. 2 H315	
Eye Irrit. 2 H319	
STOT SE 1 H370	
Full text of hazard classes and H-statement	s : see section 16
Classification according to Directive 67/5	548/EEC [DSD] or 1999/45/EC [DPD]
F; R11 T; R39/23/24/25 Xi; R36/38	
Full text of R-phrases: see section 16	
GHS-US classification	

Full text of H statements : see section 16

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Adverse physicochemical, human health and environmental effects

Eyes, Kidney, Liver, Heart, Central nervous system. Highly flammable liquid and vapour. Causes damage to organs (eyes, kidneys, liver, heart, central nervous system) (if inhaled, if swallowed, in contact with skin). Toxic in contact with skin. Toxic if inhaled. Toxic if swallowed. Causes skin irritation. Causes serious eye irritation.

2.2. Label elements	
Labeling according to Regulation (EC) N	lo. 1272/2008 [CLP]
Hazard pictograms (CLP)	
	GHS02 GHS08 GHS06
Signal word (CLP)	: Danger
Hazard statements (CLP)	 H225 - Highly flammable liquid and vapour H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled H315 - Causes skin irritation H319 - Causes serious eye irritation H370 - Causes damage to organs (eyes, heart, kidneys, liver, central nervous system) (in contact with skin, if inhaled, if swallowed)
Precautionary statements (CLP)	 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 - Keep container tightly closed. P240 - Ground/bond container and receiving equipment. P241 - Use explosion-proof electrical, lighting, ventilating equipment P260 - Do not breathe dust, mist, vapors, fume, gas, spray. P264 - Wash hands, forearms and face thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P271 - Use only outdoors or in a well-ventilated area.
GHS-US labeling	
Hazard pictograms (GHS-US)	
Signal word (GHS-US)	GHS02 GHS08 GHS06 : Danger
Hazard statements (GHS-US)	: H225 - Highly flammable liquid and vapour
	H3201+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled H315 - Causes skin irritation H319 - Causes serious eye irritation H370 - Causes damage to organs (eyes, kidneys, liver, heart, central nervous system) (Dermal, Inhalation, oral)
Precautionary statements (GHS-US)	 P210 - Keep away from heat, open flames, sparks No smoking. P233 - Keep container tightly closed. P240 - Ground/Bond container and receiving equipment P241 - Use explosion-proof electrical, lighting, ventilating equipment P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P260 - Do not breathe dust, fume, mist, gas, spray, vapors. P261 - Avoid breathing dust, fume, gas, spray, vapors, mist. P264 - Wash hands, forearms and face thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P271 - Use only outdoors or in a well-ventilated area. P280 - Wear protective clothing, protective gloves. P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
	P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P307+P311 - If exposed: Call a poison center/doctor
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- P311 Call a doctor, a POISON CENTER P312 - Call a doctor, a POISON CENTER if you feel unwell P321 - Specific treatment (see Hazardous component(s) for labeling on this label)
- P322 Specific treatment (see Hazard pictograms (CLP) on this label)
- P330 Rinse mouth.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P370+P378 In case of fire: Use alcohol resistant foam, carbon dioxide (CO2), dry
- extinguishing powder to extinguish.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed. P403+P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.

P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. **Other hazards**

PBT: not relevant - no registration required

SECTION 3: Composition/Information on ingredients

Substances 3.1.

Not applicable

3.2. **Mixtures**

Name	Product identifier	%	Classification according to Directive 67/548/EEC
100% METHANOL UNLABELED	(CAS-No.) 67-56-1 (EC-No.) 200-659-6 (EC Index-No.) 603-001-00-X (REACH-no) 01-2119433307-44	99.987359	F; R11 T; R39/23/24/25 Xi; R36/38
1,2,4,5-TETRACHLOROBENZENE (13C6, 99%)	(CAS-No.) 95-94-3 (Unlabeled) (EC-No.) 202-466-2 (Unlabeled)	0.0126	R10 N; R50/53 Xi; R36/37/38
PENTACHLOROBENZENE (13C6, 99%)	(CAS-No.) 608-93-5 (Unlabeled) (EC-No.) 210-172-0 (Unlabeled) (EC Index-No.) 602-074-00-5 (Unlabeled)	0.0126	F; R11 Xn; R22 N; R50/53
HEXACHLOROBENZENE (13C6, 99%)	(CAS-No.) 93952-14-8 (EC-No.) 204-273-9 (Unlabeled) (EC Index-No.) 602-065-00-6 (Unlabeled)	0.0126	Xi; R36 N; R50/53 Xn; R48/22
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
100% METHANOL UNLABELED	(CAS-No.) 67-56-1 (EC-No.) 200-659-6 (EC Index-No.) 603-001-00-X (REACH-no) 01-2119433307-44	99.987359	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:vapour), H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 1, H370
1,2,4,5-TETRACHLOROBENZENE (13C6, 99%)	(CAS-No.) 95-94-3 (Unlabeled) (EC-No.) 202-466-2 (Unlabeled)	0.0126	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
PENTACHLOROBENZENE (13C6, 99%)	(CAS-No.) 608-93-5 (Unlabeled) (EC-No.) 210-172-0 (Unlabeled) (EC Index-No.) 602-074-00-5 (Unlabeled)	0.0126	Flam. Sol. 1, H228 Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
HEXACHLOROBENZENE (13C6, 99%)	(CAS-No.) 93952-14-8 (EC-No.) 204-273-9 (Unlabeled) (EC Index-No.) 602-065-00-6 (Unlabeled)	0.0126	Carc. 1A, H350 STOT RE 1, H372 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410

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Name	Product identifier	%	GHS-US classification
100% METHANOL UNLABELED	(CAS-No.) 67-56-1	99.987359	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:vapour), H331 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 1, H370

Full text of R- and H- phrases: see section 16

SECTION 4: First aid measures	
4.1. Description of first aid measures	
First-aid measures general	: If medical advice is needed, have product container or label at hand. Call a physician immediately. Evacuate danger area.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Call a doctor.
First-aid measures after skin contact	: Rinse skin with water/shower. Take immediately victim to hospital. Remove/Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth. Call a physician immediately.
4.2. Most important symptoms and effe	cts, both acute and delayed
Symptoms/effects after inhalation	: Toxic if inhaled.
Symptoms/effects after skin contact	: Toxic in contact with skin. Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: Toxic if swallowed.
4.3. Indication of any immediate medica	al attention and special treatment needed
Treat symptomatically.	
SECTION 5: Firefighting measures	
5.1. Extinguishing media	
Suitable extinguishing media	: Dry powder. Dry sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.
5.2. Special hazards arising from the su	ibstance or mixture
Fire hazard	: Highly flammable liquid and vapour.
Reactivity	: Vapors may form flammable mixture with air. Highly flammable liquid and vapour.
5.3. Advice for firefighters	
Firefighting instructions	: Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing
	apparatus. Complete protective clothing. Wear recommended personal protective equipment.
Other information	: Use water spray to cool exposed surfaces.
SECTION 6: Accidental release mea	sures
6.1. Personal precautions, protective ed	uipment and emergency procedures
6.1.1. For non-emergency personnel	
Emergency procedures	: Wear respiratory protection. Do not breathe dust, mist, gas, spray, vapors, fume. Avoid contact with skin, eyes and clothing. Ventilate spillage area. Remove all sources of ignition. No open flames, no sparks, and no smoking. Ensure adequate air ventilation. Special attention should be given to low areas/pits where flammable vapors can accumulate.
6.1.2. For emergency responders	
Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
6.2. Environmental precautions	
Prevent entry to sewers and public waters. Do n	ot allow to enter drains or water courses. Avoid release to the environment.
6.3. Methods and material for containm	ent and cleaning up
For containment	: Dike and contain spill.
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Methods for cleaning up	Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters. This material and its container must be disposed of in a safe way, and as per local legislation.
Other information	: Dispose of materials or solid residues at an authorized site.
6.4. Reference to other sections	
For further information refer to section 13.	
SECTION 7: Handling and storag	e
7.1. Precautions for safe handling	
Additional hazards when processed	: Handle empty containers with care because residual vapors are flammable.
Precautions for safe handling	: No open flames. No smoking. Use only non-sparking tools.
7.2. Conditions for safe storage, inc	luding any incompatibilities
Technical measures	: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.
Storage conditions	: Store at room temperature away from light and moisture.
Incompatible materials	: Heat sources.
7.3. Specific end use(s)	

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters		
CHLOROBENZENE COCKTA	AIL TETRA/PENTA/HEXA ISOMERS (13C6,	99%) 100 UG/ML IN METHANOL
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200.00000000 ppm Basis: USA. ACGIH Threshold Limit Values (TLV)
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	250 ppm Basis: USA. ACGIH Threshold Limit Values (TLV)
Italy - Portugal - USA ACGIH	Remark (ACGIH)	Headache. Nausea. Dizziness. Eye damage. Substances for which there is a Biological Exposure Index or Indices (see BEI section). Danger of cutaneous absorption.
USA NIOSH	NIOSH REL (TWA) (mg/m³)	260 mg/m ³ Basis: NIOSH Recommended Exposure Limits
USA NIOSH	NIOSH REL (TWA) (ppm)	200 ppm Basis: NIOSH Recommended Exposure Limits
USA NIOSH	NIOSH REL (STEL) (mg/m ³)	325 mg/m ³ Basis: NIOSH Recommended Exposure Limits
USA NIOSH	NIOSH REL (STEL) (ppm)	250 ppm Basis: NIOSH Recommended Exposure Limits
USA NIOSH	Remark (NIOSH)	Potential for dermal absorption.
USA OSHA	OSHA PEL (TWA) (mg/m³)	260 mg/m ³ Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)
USA OSHA	OSHA PEL (STEL) (mg/m³)	325 mg/m ³ Basis: USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)
USA OSHA	OSHA PEL (STEL) (ppm)	250 ppm Basis: USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)
USA OSHA	OSHA PEL (Ceiling) (ppm)	1000 ppm California permissible exposure limits for chemical contaminants (Title 8, Article 107)
USA OSHA	Remark (OSHA)	The value in mg/m3 is approximate. Skin notation.

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HEXACHLOROBENZENE (13				
Italy - Portugal - USA ACGIH	ACGIH TWA (m	g/m³)	0.002 mg/m ³ Central Nervous System impairment. Porphyrin effects. Skin damage. Confirmed animal carcinogen with unknown relevance to humans. Danger of cutaneous absorption. USA. ACGHIH Threshold Limit Values (TLV)	
USA OSHA	OSHA PEL (Ceiling) (mg/m ³)		0.002 mg/m ³ California permissible exposure limits for chemical contaminants (Title 8, Article 107) - Skin	
100% METHANOL UNLABEL	ED (67-56-1)			
Italy - Portugal - USA ACGIH	ACGIH TWA (pp	pm)	200.00000000 ppm Basis: USA. ACGIH Threshold Limit Values (TLV)	
Italy - Portugal - USA ACGIH	ACGIH STEL (p	pm)	250 ppm Basis: USA. ACGIH Threshold Limit Values (TLV)	
Italy - Portugal - USA ACGIH	Remark (ACGIH)		Headache. Nausea. Dizziness. Eye damage. Substances for which there is a Biological Exposure Index or Indices (see BEI section). Danger of cutaneous absorption.	
USA NIOSH	NIOSH REL (TW	VA) (mg/m³)	260 mg/m ³ Basis: NIOSH Recommended Exposure Limits	
USA NIOSH	NIOSH REL (TW	VA) (ppm)	200 ppm Basis: NIOSH Recommended Exposure Limits	
USA NIOSH	NIOSH REL (STEL) (mg/m ³)		325 mg/m ³ Basis: NIOSH Recommended Exposure Limits	
USA NIOSH	NIOSH REL (STEL) (ppm)		250 ppm Basis: NIOSH Recommended Exposure Limits	
USA NIOSH	Remark (NIOSH)		Potential for dermal absorption.	
USA OSHA	OSHA PEL (TWA) (mg/m³)		260 mg/m ³ Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	OSHA PEL (TWA) (ppm)		200 ppm Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	OSHA PEL (STEL) (mg/m³)		325 mg/m ³ Basis: USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	OSHA PEL (STEL) (ppm)		250 ppm Basis: USA. OSHA - Table Z-1 Limits for Air Contaminants - 1910.1000. California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	OSHA PEL (Ceiling) (ppm)		1000 ppm California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
USA OSHA	Remark (OSHA)		The value in mg/m3 is approximate. Skin notation.	
CHLOROBENZENE COCKTA	IL TETRA/PENTA	VHEXA ISOMERS (13C6, 99%) 100 U	UG/ML IN METHANOL	
DNEL/DMEL (Workers)				
Acute - systemic effects, derm				
Acute - systemic effects, inhalation 260 mg/m ³				
Acute - local effects, dermal	260 mg/cm ²			
		40 mg/kg bodyweight/day		
Long-term - local effects, dermal		260 mg/cm ²		
Long-term - local effects, inhalation		260 mg/m ³		
DNEL/DMEL (General populat	ion)			
Acute - systemic effects, derm		8 mg/kg body weight		
Acute - systemic effects, inhala	ation	50 mg/m³		
Acuta avatamia offacta aral		0 ma/ka hadu wajaht		

Acute - systemic effects, oral

Acute - local effects, inhalation

Long-term - systemic effects,oral

Long-term - systemic effects, inhalation

50 mg/m³

50 mg/m³

8 mg/kg body weight

8 mg/kg bodyweight/day

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CHLOROBENZENE COCKTAIL TETRA/PENTA/HEXA ISOMERS (13C6, 99%) 100 UG/ML IN METHANOL		
Long-term - systemic effects, dermal	8 mg/kg bodyweight/day	
Long-term - local effects, inhalation	50 mg/m ³	
PNEC (Water)		
PNEC aqua (freshwater)	154 mg/l	
PNEC aqua (marine water)	15.4 mg/l	
PNEC (Sediment)		
PNEC sediment (freshwater)	570.4 mg/kg dwt	
PNEC (Soil)		
PNEC soil	23.5 mg/kg dwt	
PNEC (STP)		
PNEC sewage treatment plant	100 mg/kg	
8.2 Exposure controls		

8.2. Exposure controls

Appropriate engineering controls

: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Personal protective equipment

: Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Materials for protective clothing	: Wear suitable protective clothing and gloves.
Hand protection	: Wear suitable protective clothing and gloves.
Eye protection	: Wear eye protection. Chemical goggles or face shield with safety glasses.
Skin and body protection	: Wear suitable protective clothing, gloves and eye/face protection.
Respiratory protection	: In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator.
Environmental exposure controls	: Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and	chemical properties				
The properties listed below are for the solvent, the main component of this mixture.					
Physical state	: Liquid				
Appearance	: Liquid				
Molecular mass	: 32.04 g/mol				
Color	: Colorless				
Odor	: Pungent				
Odor threshold	: No data available				
рН	: No data available				
Relative evaporation rate (butyl acetate=1)	: No data available				
Melting point	: -98 °C (-144 °F)				
Freezing point	: No data available				
Boiling point	: 64.7 °C (148.5 °F)				
Flash point	: 9.7 °C (49.5 °F) - closed cup				
Auto-ignition temperature	: 455 °C (851 °F) at 1,013 hPa (760 mmHg)				
Decomposition temperature	: No data available				
Flammability (solid, gas)	: No data available				
Vapor pressure	: 130.3 hPa (97.7 mmHg) at 20 °C (68 °F); 169.27 hPa (126.96 mmHg) at 25 °C (77 °F)				
Vapor pressure at 50 °C	: 546.6 hPa (410 mmHg) at 50 °C (122 °F)				
Relative vapor density at 20 °C	: 1.11				
Relative density	: No data available				
Specific gravity / density	: 0.791 g/ml at 25 °C (77 °F)				
Solubility	: Water: Completely miscible				
Log Pow	: -0.77				
Log Kow	: No data available				
Viscosity, kinematic	: No data available				
Viscosity, dynamic	: No data available				

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Explosive properties	Product is not explosive.
Oxidizing properties	Non oxidizing material according to EC criteria.
Explosion limits	6 - 36 % (V)
9.2. Other information	
No additional information available	
SECTION 10: Stability and reactivity	
10.1. Reactivity	
Vapors may form flammable mixture with air. Highl	y flammable liquid and vapour.
10.2. Chemical stability	
See storage and expiration date on CoA.	
10.3. Possibility of hazardous reactions	
No dangerous reactions known under normal cond	itions of use.
10.4. Conditions to avoid	
Avoid contact with hot surfaces. Heat. No flames, r	no sparks. Eliminate all sources of ignition.
10.5. Incompatible materials	
Acid anhydrides. Acid chlorides. Oxidizing agent. A	Ikali Metal Amides. Reducing agents. Acids.
10.6. Hazardous decomposition products	
Carbon oxides (CO, CO2).	
SECTION 11: Toxicological information	n
11.1. Information on toxicological effects	
J. J	Oral: Toxic if swallowed. Dermal: Toxic in contact with skin. Inhalation:vapour: Toxic if inhaled.
•	/HEXA ISOMERS (13C6, 99%) 100 UG/ML IN METHANOL
LD50 oral rat	1187 - 2769 mg/kg
LD50 dermal rabbit	17100 mg/kg
LC50 inhalation rat (mg/l)	128.2 mg/l/4h ; 87.6 mg/l - 6 h
ATE CLP (oral)	100.000 mg/kg body weight
ATE CLP (dermal)	300.000 mg/kg body weight
ATE CLP (vapors)	3.000 mg/l/4h
ATE CLP (dust, mist)	128.200 mg/l/4h
LDLO, oral, human	143 mg/kg Remarks: Lungs, Thorax, or Respiration: Dyspnea. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
1,2,4,5-TETRACHLOROBENZENE (13C6, 99%)	· · · ·
LD50 oral rat	1500 mg/kg Remarks: Behavioral: General anesthetic. Behavioral: Somnolence. Behavioral: Convulsions or effect on seizure threshold.
ATE CLP (oral)	1500.000 mg/kg body weight
PENTACHLOROBENZENE (13C6, 99%) (608-9	3-5 (Unlabeled))
LD50 oral rat	1080 mg/kg Remarks: Behavioral:General anesthetic. Behavioral:Tremor.
LD50 dermal	> 2500 mg/kg - Rat
ATE CLP (oral)	500.000 mg/kg body weight
HEXACHLOROBENZENE (13C6, 99%) (93952-	14-8)
LD50 oral rat	10000 mg/kg
LD50 oral	> 3000 mg/kg Guinea pig
LC50 inhalation rat (mg/l)	3600 mg/m ³
ATE CLP (oral)	10000.000 mg/kg body weight
ATE CLP (vapors) ATE CLP (dust, mist)	3.600 mg/l/4h 3.600 mg/l/4h
Remarks	Behavioral: Somnolence (general depressed activity). Gastrointestinal: Necrotic changes.
	Blood: Changes in erythrocyte (RBC) count.
Additional information	LD50 Oral - Cat - 800 mg/kg. LD50 Oral - Rabbit - 1,830 mg/kg. LD50 Oral Mouse - 1760 mg/kg. LD50 - Oral - Mammal - 1400 mg/kg
100% METHANOL UNLABELED (67-56-1)	
LD50 oral rat	1187 - 2769 mg/kg
LD50 dermal rabbit	17100 mg/kg
LC50 inhalation rat (mg/l)	128.2 mg/l/4h ; 87.6 mg/l - 6 h

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100% METHANOL UNLABELED (67-56-1)	
ATE CLP (oral)	100.000 mg/kg body weight
ATE CLP (dermal)	300.000 mg/kg body weight
ATE CLP (vapors)	3.000 mg/l/4h
ATE CLP (dust, mist)	128.200 mg/l/4h
LDLO, oral, human	143 mg/kg Remarks: Lungs, Thorax, or Respiration: Dyspnea. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Skin corrosion/irritation	: Skin - Rabbit. Result: No skin irritation
Serious eye damage/irritation	: Eyes - Rabbit. Result: No eye irritation
Respiratory or skin sensitization	: Maximisation Test . Guinea pig. Did not cause sensitization. (OECD 406 method)
Germ cell mutagenicity	: AMES test : S. tymphimurium. Result: negative. fibroblast. Result: Negative. Mutation in mammalian somatic cells. Mutagenicity (in vivo mammalian bone-marrow cystogenetic test, chromosomal analysis) - Mouse - male and female Result: negative. Mouse - male and female. Result: Negative
Carcinogenicity	: Not classified
Reproductive toxicity	: Damage to fetus not classifiable. Fertility classification not possible from current data.
Specific target organ toxicity – single exposure	: Causes damage to organs through prolonged or repeated exposure
	Causes damage to organs
Specific target organ toxicity – repeated exposure	: The substance or mixture is not classified as specific target organ toxicant, repeated exposure. No data available
Aspiration hazard	: No aspiration toxicity classification.
Potential Adverse human health effects and symptoms	: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. Effects due to Ingestion may include: Headache. Dizziness. Drowsiness. metabolic acidosis. Coma. May be fatal if swallowed and enters airways. If swallowed there is a risk of blindness. Effects on humans. stomach.
Symptoms/effects after inhalation	: Toxic if inhaled.
Symptoms/effects after skin contact	: Toxic in contact with skin. Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: Toxic if swallowed.

SECTION 12: Ecological informat	tion	
12.1. Toxicity		
Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.	
CHLOROBENZENE COCKTAIL TETRA/F	PENTA/HEXA ISOMERS (13C6, 99%) 100 UG/ML IN METHANOL	
LC50 fish 1	15400 mg/l mortality LC50 - Lepomis machrochirus (Bluegill) - 96 h	
EC50 Daphnia 1	> 10000 mg/l Daphnia magna (Water flea) - 48 h	
EC50 Daphnia 2	22000 mg/l Growth inhibition EC50 - Scenedesmus capricornutum (fresh water algae) - 96 h	
NOEC (acute)	7900 mg/l Oryzias latipes - 200 h	
1,2,4,5-TETRACHLOROBENZENE (13C6, 99%) (95-94-3 (Unlabeled))		
LC50 fish 1	> 0.089 mg/l Pimephales promelas (fathead minnow) - 96 h	
EC50 Daphnia 1	> 530 mg/l Daphnia magna (Water flea) - 48 h	
NOEC (chronic)	0.3 mg/l Cyprinodon variegatus (sheepshead minnow) - 96 h	
PENTACHLOROBENZENE (13C6, 99%) (608-93-5 (Unlabeled))		
LC50 fish 1	0.247 mg/l - Pimephales promelas (fathead minnow)- 96.0 h	
HEXACHLOROBENZENE (13C6, 99%) (93952-14-8)		
LC50 fish 1	7.6 mg/l Lepomis macrochirus (Bluegill) - 96 h	
EC50 other aquatic organisms 1	> 0.005 mg/l Daphnia magna (Water flea) - 48 h	
NOEC (chronic)	> 0.0048 mg/l Pimephales promelas (fathead minnow) - 96 h	
100% METHANOL UNLABELED (67-56-1)		
LC50 fish 1	15400 mg/l mortality LC50 - Lepomis machrochirus (Bluegill) - 96 h	
EC50 Daphnia 1	> 10000 mg/l Daphnia magna (Water flea) - 48 h	
EC50 Daphnia 2	22000 mg/l Growth inhibition EC50 - Scenedesmus capricornutum (fresh water algae) - 96 h	
NOEC (acute)	7900 mg/l Oryzias latipes - 200 h	

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12.2. Persistence and degradability	
CHLOROBENZENE COCKTAIL TETRA/PENT	A/HEXA ISOMERS (13C6, 99%) 100 UG/ML IN METHANOL
Biochemical oxygen demand (BOD)	600 - 1200 mg/g
Chemical oxygen demand (COD)	1420 mg/g
ThOD	1500 mg/g
Biodegradation	72 % - rapidly biodegradable aerobic - Exposure time 5 d
1,2,4,5-TETRACHLOROBENZENE (13C6, 99%	
Persistence and degradability	Not available.
<u> </u>	
PENTACHLOROBENZENE (13C6, 99%) (608-9	
Persistence and degradability	May cause long-term adverse effects in the environment.
HEXACHLOROBENZENE (13C6, 99%) (93952-	
Persistence and degradability	Not available.
100% METHANOL UNLABELED (67-56-1)	
Biochemical oxygen demand (BOD)	600 - 1200 mg/g
Chemical oxygen demand (COD)	1420 mg/g
ThOD	1500 mg/g
Biodegradation	72 % - rapidly biodegradable aerobic - Exposure time 5 d
12.3. Bioaccumulative potential	
•	A/HEXA ISOMERS (13C6, 99%) 100 UG/ML IN METHANOL
BCF fish 1	5 mg/l Cyprinus carpio (Carp) - 72 d at 20 °C
Bioconcentration factor (BCF REACH)	
Log Pow	-0.77
1,2,4,5-TETRACHLOROBENZENE (13C6, 99%	
BCF fish 1	3.02 ug/l - Jordanella floridae - 28 d
Bioconcentration factor (BCF REACH)	4050
PENTACHLOROBENZENE (13C6, 99%) (608-9	
BCF fish 1	79.8 - μg/l. Pimephales promelas (fathead minnow) - 31 d
HEXACHLOROBENZENE (13C6, 99%) (93952-	14-8)
Bioconcentration factor (BCF REACH)	22000
Bioaccumulative potential	Bioaccumulation Pimephale promelas (fathead minnow) - 32 d - 0.0003 mg/l.
100% METHANOL UNLABELED (67-56-1)	
BCF fish 1	5 mg/l Cyprinus carpio (Carp) - 72 d at 20 °C
Bioconcentration factor (BCF REACH)	1
Log Pow	-0.77
12.4. Mobility in soil	
•	A/HEXA ISOMERS (13C6, 99%) 100 UG/ML IN METHANOL
Ecology - soil	Not degradable in the soil.
1,2,4,5-TETRACHLOROBENZENE (13C6, 99%	
Ecology - soil	Not available.
HEXACHLOROBENZENE (13C6, 99%) (93952-	·
Ecology - soil	Not available.
100% METHANOL UNLABELED (67-56-1)	
Ecology - soil	Not degradable in the soil.
12.5. Results of PBT and vPvB assessmen	t
CHLOROBENZENE COCKTAIL TETRA/PENT	A/HEXA ISOMERS (13C6, 99%) 100 UG/ML IN METHANOL
PBT: not relevant – no registration required	
100% METHANOL UNLABELED (67-56-1)	
PBT: not relevant – no registration required	
12.6. Other adverse effects	
Other adverse effects	: Avoid release to the environment.
Other information	: Stability in water: at 19 °C - (83 - 91%) - 72 h. Remarks: Hydrolyses on contact with water. Hydrolyses readily.

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SECTION 13: Disposal consideration	ns
	15
13.1. Waste treatment methods	: Waste materials should be disposed of under conditions which meet Federal, State, and local
Regional legislation (waste)	environmental control regulations.
Product/Packaging disposal recommendations	 Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Ecology - waste materials	: Dispose of as unused product.
SECTION 14: Transport information	
In accordance with ADR / RID / IMDG / IATA / A	DN
14.1. UN number	
UN-No.(DOT)	: 1230
DOT NA no.	UN1230
14.2. UN proper shipping name	
Proper Shipping Name (DOT)	: Methanol
Class (DOT)	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Hazard labels (DOT)	: 3 - Flammable liquid
	6.1 - Poison
	FLAMMABLE LIQUID POISON
DOT Symbols	 + - Fixes (cannot be altered) proper shipping name, hazard class, and packing group, I - Proper shipping name appropriate for international and domestic transportation
Packing group (DOT)	: II - Medium Danger
DOT Special Provisions (49 CFR 172.102)	 : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T7 - 4 178.274(d)(2) Normal
DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
14.3. Additional information	
Emergency Response Guide (ERG) Number	: 131
Other information	: No supplementary information available.
Overland transport	
Packing group (ADR)	
Class (ADR)	: 3 - Flammable liquid
Hazard identification number (Kemler No.)	: 336
Classification code (ADR)	: FT1
Hazard labels (ADR)	: 3 - Flammable liquids 6.1 - Toxic substances

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Orange plates	336 1230
Tunnel restriction code (ADR)	: D/E
Limited quantities (ADR)	11
Excepted quantities (ADR)	: E2
Transport by sea	
DOT Vessel Stowage Location	: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"
MFAG-No	: 131
Air transport	
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 60 L
Civil Aeronautics Law	: Flammable liquids
14.4. Environmental hazards	
Other information	: No supplementary information available.

Special precautions for user 14.5.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code 14.6.

Not applicable

SECTION 15: Regulatory information	n	
15.1. US Federal regulations		
CHLOROBENZENE COCKTAIL TETRA/PEN	TA/HEXA ISOMERS (13C6, 99%) 100 UG/ML IN METHANOL	
Listed on the United States TSCA (Toxic Subs	tances Control Act) inventory	
CERCLA RQ	5000 lb	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard	
SARA Section 313 - Emission Reporting	Subject to reporting requirements of United States SARA Section 313	
100% METHANOL UNLABELED (67-56-1)		
Listed on the United States TSCA (Toxic Substances Control Act) inventory		
CERCLA RQ	5000 lb	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard	
SARA Section 313 - Emission Reporting	Subject to reporting requirements of United States SARA Section 313	

15.2. International regulations

CANADA

CHLOROBENZENE COCKTAIL TETRA/PENTA/HEXA ISOMERS (13C6, 99%) 100 UG/ML IN METHANOL
Listed on the Canadian DSL (Domestic Substances List)
100% METHANOL UNLABELED (67-56-1)
Listed on the Canadian DSL (Domestic Substances List)

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15.2.1. National regulations

No additional information available

15.3. US State regulations

15.5. 05 State regulations	>			
CHLOROBENZENE COCH	(TAIL TETRA/PENTA/HEXA	ISOMERS (13C6, 99%) 100 U	IG/ML IN METHANOL	
U.S California - Proposition 65 - Carcinogens List		No		
U.S California - Proposition 65 - Developmental Toxicity		Yes		
U.S California - Proposition 65 - Reproductive Toxicity - Female		No		
U.S California - Proposition 65 - Reproductive Toxicity - Male		No		
State or local regulations		U.S Delaware - Pollutant Discharge Requirements - Reportable Quantities U.S Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations U.S Massachusetts - Right To Know List U.S Pennsylvania - RTK (Right to Know) List U.S New Jersey - Right to Know Hazardous Substance List U.S New York - Reporting of Releases Part 597 - List of Hazardous Substances		
100% METHANOL UNLA	BELED (67-56-1)			
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	Yes	No	No	
100% METHANOL UNLA	BELED (67-56-1)	-		
State or local regulations				
	ht To Know List	eportable Quantities cceptable Ambient Concentration	ons	

U.S. - Pennsylvania - RTK (Right to Know) List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

SECTION 16: Other information

Other information

: This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of R-, H- and EUH-phrases:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal) Category 3
Acute Tox. 3 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Carc. 1A	Carcinogenicity Category 1A
Eye Irrit. 2	Serious eye damage/eye irritation Category 2
Flam. Liq. 2	Flammable liquids Category 2
Flam. Sol. 1	Flammable solids Category 1
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 1	Specific target organ toxicity (single exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapour
H228	Flammable solid
H301	Toxic if swallowed
H302	Harmful if swallowed
H311	Toxic in contact with skin

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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H315	Causes skin irritation
H319	Causes serious eye irritation
H331	Toxic if inhaled
H335	May cause respiratory irritation
H350	May cause cancer
H370	Causes damage to organs
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
R10	Flammable
R11	Highly flammable
R22	Harmful if swallowed
R36	Irritating to eyes
R36/37/38	Irritating to eyes, respiratory system and skin
R36/38	Irritating to eyes and skin
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
F	Highly flammable
Ν	Dangerous for the environment
Т	Toxic
Xi	Irritant
Xn	Harmful

NFPA health hazard	: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard	: 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.
NFPA reactivity	: 0 - Material that in themselves are normally stable, even under fire conditions.
Hazard Rating	
Health	: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability	: 3 Serious Hazard
Physical	: 0 Minimal Hazard

CIL Mixture SDS

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