

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Acid Matrix Spike Mix
Product code : AL0-101493
Product group : Trade product

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category : Laboratory Use
Industrial/Professional use spec : Industrial
For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Phenova
6390 Joyce Dr. Suite 100
80403 Golden, CO - United States
T 1-866-942-2978 - F 1-866-283-0269
info@phenova.com - www.phenova.com

1.4. Emergency telephone number

Emergency number : ChemTel Assistance (US/Canada) 1-800-255-3924
ChemTel Assistance (International) +1 813-248-0585

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Liq. 2 H225
Acute Tox. 3 (Oral) H301
Acute Tox. 3 (Dermal) H311
STOT SE 1 H370
Aquatic Chronic 3 H412

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

F; R11
T; R23/24/25
T; R39/23/24/25
R52/53

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word (CLP) : Danger
Hazardous ingredients : methanol, 2,3,4,5,6-pentachlorophenol, phenol
Hazard statements (CLP) : H225 - Highly flammable liquid and vapor

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	H301+H311 - Toxic if swallowed or in contact with skin H370 - Causes damage to organs H412 - Harmful to aquatic life with long lasting effects
Precautionary statements (CLP)	: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking P233 - Keep container tightly closed P260 - Do not breathe dust/fume/gas/mist/vapors/spray P270 - Do not eat, drink or smoke when using this product P273 - Avoid release to the environment P280 - Wear protective gloves/protective clothing/eye protection/face protection P308+P313 - IF exposed or concerned: Get medical advice/attention P403+P235 - Store in a well-ventilated place. Keep cool
EUH phrases	: EUH208 - Contains 4-chloro-3-methylphenol(59-50-7). May produce an allergic reaction
No labeling applicable	

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
methanol (Component)	(CAS No) 67-56-1 (EC no) 200-659-6 (EC index no) 603-001-00-X	99	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT SE 1, H370
2,3,4,5,6-pentachlorophenol (Component)	(CAS No) 87-86-5 (EC no) 201-778-6 (EC index no) 604-002-00-8	0.2	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 2 (Inhalation), H330 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Carc. 2, H351 STOT SE 3, H335 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)
phenol (Component)	(CAS No) 108-95-2 (EC no) 203-632-7 (EC index no) 604-001-00-2	0.2	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Skin Corr. 1B, H314 Muta. 2, H341 STOT RE 2, H373
2-chlorophenol (Component)	(CAS No) 95-57-8 (EC no) 202-433-2 (EC index no) 604-008-00-0	0.2	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Aquatic Chronic 2, H411
4-chloro-3-methylphenol (Component)	(CAS No) 59-50-7 (EC no) 200-431-6 (EC index no) 604-014-00-3	0.2	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Acute 1, H400
Name	Product identifier	Specific concentration limits	
methanol (Component)	(CAS No) 67-56-1 (EC no) 200-659-6 (EC index no) 603-001-00-X	(3 =< C < 10) STOT SE 2, H371 (C >= 10) STOT SE 1, H370	
phenol (Component)	(CAS No) 108-95-2 (EC no) 203-632-7 (EC index no) 604-001-00-2	(1 =< C < 3) Eye Irrit. 2, H319 (1 =< C < 3) Skin Irrit. 2, H315 (C >= 3) Skin Corr. 1B, H314	

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. Call a POISON CENTER or doctor/physician. IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Immediately call a poison center or doctor/physician. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. If skin irritation or rash occurs:

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- First-aid measures after eye contact : Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : There are potential chronic health effects to consider.
- Symptoms/injuries after inhalation : May cause an allergic skin reaction.
- Symptoms/injuries after skin contact : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Toxic in contact with skin. Causes skin irritation.
- Symptoms/injuries after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Highly flammable liquid and vapor.
- Explosion hazard : May form flammable/explosive vapor-air mixture.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection. Avoid breathing dust/fume/gas/mist/vapors/spray.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up in absorbent material. Collect spillage.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.
- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking. Use only non-sparking tools. Obtain special instructions before use. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood.
- Hygiene measures : Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Gently wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.
- Storage conditions : Keep in fireproof place. Keep container tightly closed. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.
- Incompatible materials : Direct sunlight. Heat sources.

7.3. Specific end use(s)

No additional information available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls : Either local exhaust or general room ventilation is usually required.
Personal protective equipment : Avoid all unnecessary exposure. Gloves. Protective clothing. Protective goggles. Safety glasses.



Hand protection : Wear chemically resistant protective gloves. Wear suitable gloves resistant to chemical penetration.
Eye protection : Chemical goggles or safety glasses. Safety glasses.
Skin and body protection : Wear suitable protective clothing. Wear chemically protective gloves, lab coat or apron to prevent prolonged or repeated skin contact.
Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.
Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Color : Colorless.
Odor : characteristic.
pH : No data available
Melting point : No data available
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : Highly flammable liquid and vapor
Relative density : No data available
Solubility : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Explosion limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Highly flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

May release flammable gases.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Toxic if swallowed. Dermal: Toxic in contact with skin.

Acid Matrix Spike Mix	
ATE CLP (oral)	100.604 mg/kg body weight
ATE CLP (dermal)	302.142 mg/kg body weight
4-chloro-3-methylphenol (59-50-7)	
LD50 oral rat	1194 mg/kg (Rat)
LC50 inhalation rat (mg/l)	> 0.7 mg/l/4h (Rat)
ATE CLP (oral)	1194.000 mg/kg body weight
ATE CLP (dermal)	1100.000 mg/kg body weight
2-chlorophenol (95-57-8)	
LD50 oral rat	670 mg/kg body weight (Rat; Literature study)
ATE CLP (oral)	670.000 mg/kg body weight
ATE CLP (dermal)	1100.000 mg/kg body weight
ATE CLP (gases)	4500.000 ppmV/4h
ATE CLP (vapors)	11.000 mg/l/4h
ATE CLP (dust, mist)	1.500 mg/l/4h
2,3,4,5,6-pentachlorophenol (87-86-5)	
ATE CLP (oral)	100.000 mg/kg body weight
ATE CLP (dermal)	300.000 mg/kg body weight
ATE CLP (gases)	100.000 ppmV/4h
ATE CLP (vapors)	0.500 mg/l/4h
ATE CLP (dust, mist)	0.050 mg/l/4h
phenol (108-95-2)	
LD50 oral rat	650 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rat	660 mg/kg (Rat; Experimental value; Equivalent or similar to OECD 402)
LD50 dermal rabbit	850 - 1400 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	0.32 mg/l/4h (Rat; Literature study)
ATE CLP (oral)	100.000 mg/kg body weight
ATE CLP (dermal)	660.000 mg/kg body weight
ATE CLP (gases)	700.000 ppmV/4h
ATE CLP (vapors)	0.320 mg/l/4h
ATE CLP (dust, mist)	0.320 mg/l/4h
methanol (67-56-1)	
LD50 oral rat	> 5000 mg/kg (Rat; BASF test; Literature study; 1187-2769 mg/kg bodyweight; Rat; Weight of evidence)
LD50 dermal rabbit	15800 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	85 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	64000 ppm/4h (Rat; Literature study)
ATE CLP (oral)	100.000 mg/kg body weight
ATE CLP (dermal)	300.000 mg/kg body weight
ATE CLP (gases)	700.000 ppmV/4h
ATE CLP (vapors)	3.000 mg/l/4h
ATE CLP (dust, mist)	0.500 mg/l/4h

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified Based on available data, the classification criteria are not met
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified May cause cancer
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Causes damage to organs.
Specific target organ toxicity (repeated exposure)	: Not classified There are potential chronic health effects to consider

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Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Toxic if swallowed. Toxic in contact with skin.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Toxic to aquatic life with long lasting effects.

4-chloro-3-methylphenol (59-50-7)	
LC50 fish 2	0.917 mg/l (LC50; 96 h)
EC50 Daphnia 2	2 mg/l (EC50; 48 h)
Threshold limit algae 1	4.2 mg/l (EC50; 72 h)
2-chlorophenol (95-57-8)	
LC50 fish 1	2.6 mg/l (LC50; 96 h; Salmo gairdneri)
EC50 Daphnia 1	7.4 mg/l (EC50; 48 h; Daphnia magna)
Threshold limit algae 2	70 mg/l (EC50; 72 h; Algae)
2,3,4,5,6-pentachlorophenol (87-86-5)	
LC50 fish 1	0.052 mg/l (LC50; 96 h)
EC50 Daphnia 1	0.01 - 0.36 mg/l (EC50; 48 h)
phenol (108-95-2)	
LC50 other aquatic organisms 1	0.04 mg/l (4 days; Rana sp.; LC50)
EC50 Daphnia 2	6.6 mg/l (EC50; 48 h; Daphnia magna; Static system)
methanol (67-56-1)	
LC50 fish 1	15400 mg/l (LC50; EPA 660/3 - 75/009; 96 h; Lepomis macrochirus; Flow-through system; Fresh water; Experimental value)
EC50 Daphnia 1	> 10000 mg/l (EC50; DIN 38412-11; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
LC50 fish 2	10800 mg/l (LC50; 96 h; Salmo gairdneri)

12.2. Persistence and degradability

Acid Matrix Spike Mix	
Persistence and degradability	May cause long-term adverse effects in the environment.
4-chloro-3-methylphenol (59-50-7)	
Persistence and degradability	Biodegradable in water.
Chemical oxygen demand (COD)	1.5 - 1.8 g O ₂ /g substance
2-chlorophenol (95-57-8)	
Persistence and degradability	Not readily biodegradable in water. Inherently biodegradable. Biodegradable in the soil.
2,3,4,5,6-pentachlorophenol (87-86-5)	
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil.
phenol (108-95-2)	
Persistence and degradability	Readily biodegradable in water. Photolysis in water. Readily biodegradable in the soil. Inhibits biodegradation processes in the soil. Low potential for adsorption in soil. Photooxidation in the air.
Biochemical oxygen demand (BOD)	1.68 g O ₂ /g substance
Chemical oxygen demand (COD)	2.28 g O ₂ /g substance
ThOD	2.38 g O ₂ /g substance
BOD (% of ThOD)	0.71
methanol (67-56-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.
Biochemical oxygen demand (BOD)	0.6 - 1.12 g O ₂ /g substance
Chemical oxygen demand (COD)	1.42 g O ₂ /g substance
ThOD	1.5 g O ₂ /g substance
BOD (% of ThOD)	0.8 (Literature study)

12.3. Bioaccumulative potential

Acid Matrix Spike Mix	
Bioaccumulative potential	Not established.
4-chloro-3-methylphenol (59-50-7)	
BCF fish 1	5.5 - 13 (BCF)

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4-chloro-3-methylphenol (59-50-7)	
Log Pow	2.78 - 3.10
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
2-chlorophenol (95-57-8)	
BCF fish 2	14 - 29 (BCF; 6 weeks; Cyprinus carpio)
Log Pow	2.15 (Literature)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
2,3,4,5,6-pentachlorophenol (87-86-5)	
BCF fish 1	770 (BCF; 768 h)
BCF fish 2	39 - 224 (BCF)
BCF other aquatic organisms 1	1250 (BCF)
Log Pow	4.07 - 5.19
Bioaccumulative potential	High potential for bioaccumulation (Log Kow > 5).
phenol (108-95-2)	
Log Pow	1.47 (Experimental value; Equivalent or similar to OECD 117; 30 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
methanol (67-56-1)	
BCF fish 1	< 10 (BCF; 72 h; Leuciscus idus)
Log Pow	-0.77 (Experimental value; Other)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

2-chlorophenol (95-57-8)	
Surface tension	0.042 N/m (13 °C)
phenol (108-95-2)	
Surface tension	0.0713 N/m (20 °C)
methanol (67-56-1)	
Surface tension	0.023 N/m (20 °C)
Log Koc	Koc,PCKOCWIN v1.66; 1; Calculated value

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Additional information : Avoid release to the environment

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Additional information : Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials : Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 1992
UN-No.(IATA) : 1992

14.2. UN proper shipping name

Proper Shipping Name (ADR) : FLAMMABLE LIQUID, TOXIC, N.O.S.
Proper Shipping Name (IATA) : FLAMMABLE LIQUID, TOXIC, N.O.S.
Transport document description (ADR) : UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S., 3 (6.1), II, (D/E)

14.3. Packing group

Class (ADR) : 3
Classification code (ADR) : FT1
Class (IATA) : 3
Subsidiary risks (ADR) : 6.1

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Hazard labels (ADR) : 3, 6.1



Hazard labels (IATA) : 3, 6.1



14.4. Packing group

Packing group (ADR) : II

Packing group (IATA) : II

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

14.6.1. Overland transport

Hazard identification number (Kemler No.) : 336

Classification code (ADR) : FT1

Orange plates :



Special provision (ADR) : 274

Transport category (ADR) : 2

Tunnel restriction code (ADR) : D/E

Limited quantities (ADR) : 1I

Excepted quantities (ADR) : E2

14.6.2. Transport by sea

No additional information available

14.6.3. Air transport

CAO packing instructions (IATA) : 364

CAO max net quantity (IATA) : 60L

PCA packing instructions (IATA) : 352

PCA Limited quantities (IATA) : Y341

PCA limited quantity max net quantity (IATA) : 1L

PCA max net quantity (IATA) : 1L

PCA Excepted quantities (IATA) : E2

ERG code (IATA) : 3HP

14.6.4. Inland waterway transport

Carriage prohibited (ADN) : No

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

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no substances with Annex XVII restrictions

Contains no REACH candidate substance

Contains no REACH Annex XIV substances.

15.1.2. National regulations

No additional information available

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15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

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