

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

#### 1.1. Product identifier

Product form : Mixture  
Product name : Custom BNA Surrogate Mix  
Product code : AL0-130160  
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  
Use of the substance/mixture : Certified reference material for laboratory 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](mailto:info@phenova.com) - [www.phenova.com](http://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  
Carc. 2 H351  
STOT SE 1 H370

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

Carc. Cat. 3; R40  
F; R11  
T; R23/24/25  
T; R39/23/24/25

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) :



GHS02

GHS06

GHS08

Signal word (CLP) : Danger

# Custom BNA Surrogate Mix

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Hazardous ingredients	: Methylene Chloride; methanol
Hazard statements (CLP)	: H225 - Highly flammable liquid and vapor H301+H311 - Toxic if swallowed or in contact with skin H351 - Suspected of causing cancer H370 - Causes damage to organs
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 P280 - Wear protective gloves/protective clothing/eye protection/face protection P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water P308+P313 - IF exposed or concerned: Get medical advice/attention P361+P364 - Take off immediately all contaminated clothing and wash it before reuse P370+P378 - In case of fire: Use media other than water to extinguish P403+P235 - Store in a well-ventilated place. Keep cool P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

No labeling applicable

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
methanol	(CAS No) 67-56-1 (EC-No.) 200-659-6 (EC index no) 603-001-00-X	98.955	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT SE 1, H370
Methylene Chloride (Component)	(CAS No) 75-09-2 (EC-No.) 200-838-9 (EC index no) 602-004-00-3	1	Carc. 2, H351
Phenol (Component) substance with a Community workplace exposure limit	(CAS No) 13127-88-3 (EC-No.) 236-063-8 (EC index no) 604-001-00-2	0.01	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Skin Corr. 1B, H314 Muta. 2, H341 STOT RE 2, H373
nitrobenzene-D5 (Component) substance listed as REACH Candidate (Nitrobenzene) substance with a Community workplace exposure limit	(CAS No) 4165-60-0 (EC-No.) 224-014-3 (EC index no) 609-003-00-7	0.005	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Carc. 2, H351 Repr. 1B, H360F STOT RE 1, H372 Aquatic Chronic 3, H412
Name	Product identifier	Specific concentration limits	
methanol	(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) 13127-88-3 (EC-No.) 236-063-8 (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. IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation	: Allow victim to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

No additional information available

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### 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 : Foam. Dry powder. Carbon dioxide. Water spray. Sand.  
Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : 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.  
Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

### 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. Take precautionary measures against static discharge. Use only non-sparking tools. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.  
Hygiene measures : Gently wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.

### 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 container tightly closed. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.  
Incompatible products : Strong bases. Strong acids.  
Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.

### 7.3. Specific end use(s)

No additional information available

## 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.

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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 chemically protective gloves, lab coat or apron to prevent prolonged or repeated skin contact.

Respiratory protection : Wear appropriate mask.

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) : 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

Not established. 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. Overheating. Heat. Sparks.

#### 10.5. Incompatible materials

Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

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

Custom BNA Surrogate Mix	
ATE CLP (oral)	101.0560355717 mg/kg body weight
ATE CLP (dermal)	303.1681067152 mg/kg body weight
nitrobenzene-D5 (4165-60-0)	
LD50 oral rat	855 mg/kg body weight (Rat, Experimental value)

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<b>nitrobenzene-D5 (4165-60-0)</b>	
LD50 dermal rabbit	760 mg/kg body weight (Rabbit; Experimental value)
ATE CLP (oral)	855 mg/kg body weight
ATE CLP (dermal)	760 mg/kg body weight
<b>Phenol (13127-88-3)</b>	
ATE CLP (oral)	100 mg/kg body weight
ATE CLP (dermal)	300 mg/kg body weight
<b>Methylene Chloride (75-09-2)</b>	
LD50 oral rat	> 2000 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Literature study)
<b>methanol (67-56-1)</b>	
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 mg/kg body weight
ATE CLP (dermal)	300 mg/kg body weight
ATE CLP (gases)	700 ppmV/4h
ATE CLP (vapors)	3 mg/l/4h
ATE CLP (dust, mist)	0.5 mg/l/4h

Skin corrosion/irritation	: Not classified Based on available data, the classification criteria are not met
Serious eye damage/irritation	: Not classified Based on available data, the classification criteria are not met
Respiratory or skin sensitization	: Not classified Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: Suspected of causing cancer. 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. Based on available data, the classification criteria are not met
Specific target organ toxicity – repeated exposure	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

### 12.1. Toxicity

<b>nitrobenzene-D5 (4165-60-0)</b>	
LC50 fish 2	92 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Brachydanio rerio; Flow-through system; Fresh water; Experimental value)
<b>Methylene Chloride (75-09-2)</b>	
LC50 fish 1	193 mg/l (LC50; 96 h; Pimephales promelas)
EC50 Daphnia 1	168.2 mg/l (EC50; 48 h)
<b>methanol (67-56-1)</b>	
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)

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### 12.2. Persistence and degradability

Custom BNA Surrogate Mix	
Persistence and degradability	Not established.
nitrobenzene-D5 (4165-60-0)	
Persistence and degradability	Not readily biodegradable in water. Biodegradable in the soil. Low potential for adsorption in soil.
Biochemical oxygen demand (BOD)	0 g O <sub>2</sub> /g substance
ThOD	1.95 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0
Phenol (13127-88-3)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Inhibits biodegradation processes in the soil.
Biochemical oxygen demand (BOD)	1.68 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	2.28 g O <sub>2</sub> /g substance
ThOD	2.38 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.71
Methylene Chloride (75-09-2)	
Persistence and degradability	Not readily biodegradable in water. Biodegradable in the soil.
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 <sub>2</sub> /g substance
Chemical oxygen demand (COD)	1.42 g O <sub>2</sub> /g substance
ThOD	1.5 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.8 (Literature study)

### 12.3. Bioaccumulative potential

Custom BNA Surrogate Mix	
Bioaccumulative potential	Not established.
nitrobenzene-D5 (4165-60-0)	
BCF fish 1	15 (BCF; 672 h; Pimephales promelas)
BCF fish 2	1.6 - 7.7 (BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 42 days; Cyprinus carpio; Flow-through system; Fresh water; Experimental value; Non deuterium form)
BCF other aquatic organisms 1	24 (BCF)
Log Pow	1.85 (Calculated; 1.86; Experimental value; EU Method A.8: Partition Coefficient)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
Phenol (13127-88-3)	
BCF fish 1	20 (BCF)
BCF fish 2	1276 - 1496 (BCF)
BCF other aquatic organisms 1	277 (BCF)
BCF other aquatic organisms 2	3.5 - 16 (BCF)
Log Pow	1.46 (Experimental value)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).
Methylene Chloride (75-09-2)	
BCF fish 1	2 - 40 (BCF)
Log Pow	1.25 (Experimental value)
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

nitrobenzene-D5 (4165-60-0)	
Log Koc	Koc,Other; 118; Calculated value; log Koc; Other; 2.07; Calculated value
Methylene Chloride (75-09-2)	
Surface tension	0.028 N/m (20 °C)
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.
methanol (67-56-1)	
Surface tension	0.023 N/m (20 °C)

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### methanol (67-56-1)

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

Product/Packaging 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.

### SECTION 14: Transport information

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

#### 14.1. UN number

UN-No. (ADR) : 1992  
UN-No. (IATA) : 1992  
UN-No. (IMDG) : 1992  
UN-No. (ADN) : 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.  
Proper Shipping Name (IMDG) : FLAMMABLE LIQUID, TOXIC, N.O.S.  
Proper Shipping Name (ADN) : FLAMMABLE LIQUID, TOXIC, N.O.S.  
Transport document description (ADR) : UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (dichloromethane(75-09-2)), 3 (6.1), II, (D/E)

#### 14.3. Packing group

Class (ADR) : 3  
Classification code (ADR) : FT1  
Class (IATA) : 3  
Class (IMDG) : 3  
Class (ADN) : 3  
Classification code (ADN) : FT1  
Subsidiary risks (ADR) : 6.1  
Subsidiary risks (IMDG) : 6.1  
Hazard labels (ADR) : 3, 6.1



Hazard labels (IATA) : 3, 6.1



Hazard labels (IMDG) : 3, 6.1



Hazard labels (ADN) : 3, 6.1



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### 14.4. Packing group

Packing group (ADR)	: II
Packing group (IATA)	: II
Packing group (IMDG)	: II
Packing group (ADN)	: II

### 14.5. Environmental hazards

Other information	: No supplementary information available.
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### 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

Special provision (IMDG)	: 274
Limited quantities (IMDG)	: 1 L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP2, TP13
EmS-No. (Fire)	: F-E
EmS-No. (Spillage)	: S-D
Stowage category (IMDG)	: B
Properties and observations (IMDG)	: Flammable toxic liquid which is not specified by name in this class or, on account of its characteristics, in some other class. Toxic if swallowed, by skin contact or by inhalation.

#### 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
Special provision (IATA)	: A3
ERG code (IATA)	: 3HP

#### 14.6.4. Inland waterway transport

Special provision (ADN)	: 274, 802
Limited quantities (ADN)	: 1 L
Excepted quantities (ADN)	: E2
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EP, EX, TOX, A
Ventilation (ADN)	: VE01, VE02
Number of blue cones/lights (ADN)	: 2
Carriage prohibited (ADN)	: No

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

Not applicable



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### 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 REACH substances with Annex XVII restrictions

Contains no REACH candidate substance  $\geq 0,1$  % / SCL

Contains no REACH Annex XIV substances.

##### 15.1.2. National regulations

No additional information available

#### 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.

PHV SDS EU

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