

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

1.1. Product identifier

Product form : Mixture
 Product name : BNA Internal Standard
 Product code : AL0-130542

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

1.3. Details of the supplier of the safety data sheet

Phenova
 6390 Joyce Dr. Suite 100
 Golden, CO 80403 - 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

GHS-US classification

Carc. 1A H350

Full text of H statements : see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS08

Signal word (GHS-US) : Danger
 Hazard statements (GHS-US) : H350 - May cause cancer
 Precautionary statements (GHS-US) : P201 - Obtain special instructions before use.
 P202 - Do not handle until all safety precautions have been read and understood.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P308+P313 - If exposed or concerned: Get medical advice/attention.
 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

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Methylene Chloride (Component)	(CAS-No.) 75-09-2	98.8	Carc. 1B, H350
1,4-Dichlorobenzene-d4 (Component)	(CAS-No.) 3855-82-1	0.2	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Carc. 2, H351

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Name	Product identifier	%	GHS-US classification
Chrysene-d12 (Component)	(CAS-No.) 1719-03-5	0.2	Muta. 2, H341 Carc. 1A, H350 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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 affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- 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

- Symptoms/effects after inhalation : May cause cancer by inhalation.

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

No additional information available

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. Avoid release to the environment.

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

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

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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

Storage conditions : Keep container closed when not in use. 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.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

BNA Internal Standard		
USA ACGIH	ACGIH TWA (ppm)	50 ppm
USA ACGIH	Remark (ACGIH)	COHb-emia; CNS impair
USA OSHA	Remark (OSHA)	(2) See Table Z-2.

1,4-Dichlorobenzene-d4 (3855-82-1)		
USA ACGIH	ACGIH TWA (ppm)	10 ppm (p-Dichlorobenzene; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	450 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	75 ppm
USA OSHA	OSHA PEL (STEL) (mg/m ³)	675 mg/m ³
USA OSHA	OSHA PEL (STEL) (ppm)	110 ppm

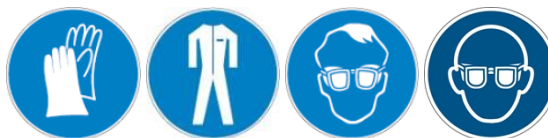
Chrysene-d12 (1719-03-5)		
USA OSHA	OSHA PEL (TWA) (mg/m ³)	0.2 mg/m ³

Methylene Chloride (75-09-2)		
USA ACGIH	ACGIH TWA (ppm)	50 ppm (Dichloromethane (Methylene chloride); USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
USA ACGIH	Remark (ACGIH)	COHb-emia; CNS impair
USA OSHA	Remark (OSHA)	(2) See Table Z-2.

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 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.

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Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: 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)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 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.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

1,4-Dichlorobenzene-d4 (3855-82-1)	
LD50 oral rat	500 mg/kg
LD50 dermal rat	> 6000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)
LC50 inhalation rat (mg/l)	> 5 mg/l/4h (Rat)
ATE CLP (oral)	500 mg/kg body weight
Methylene Chloride (75-09-2)	
LD50 oral rat	> 2000 mg/kg (Rat; Literature study)

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Methylene Chloride (75-09-2)	
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Literature study)
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: May cause cancer. Based on available data, the classification criteria are not met

1,4-Dichlorobenzene-d4 (3855-82-1)	
IARC group	2B - Possibly carcinogenic to humans

Methylene Chloride (75-09-2)	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	3 - Reasonably anticipated to be Human Carcinogen
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity – single exposure	: Not classified
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.
Symptoms/effects after inhalation	: May cause cancer by inhalation.

SECTION 12: Ecological information

12.1. Toxicity

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

1,4-Dichlorobenzene-d4 (3855-82-1)	
LC50 fish 2	1.12 mg/l (LC50; 96 h; Salmo gairdneri)
EC50 Daphnia 2	0.7 mg/l (EC50; 48 h)

Methylene Chloride (75-09-2)	
LC50 fish 1	193 mg/l (LC50; 96 h; Pimephales promelas)
EC50 Daphnia 1	168.2 mg/l (EC50; 48 h)

12.2. Persistence and degradability

BNA Internal Standard	
Persistence and degradability	May cause long-term adverse effects in the environment.

1,4-Dichlorobenzene-d4 (3855-82-1)	
Persistence and degradability	Readily biodegradable in water. Non degradable in the soil. Adsorbs into the soil.
ThOD	1.52 g O ₂ /g substance
BOD (% of ThOD)	0.65 (Calculated value)

Methylene Chloride (75-09-2)	
Persistence and degradability	Not readily biodegradable in water. Biodegradable in the soil.

12.3. Bioaccumulative potential

BNA Internal Standard	
Bioaccumulative potential	Not established.

1,4-Dichlorobenzene-d4 (3855-82-1)	
BCF fish 1	100 (BCF)
BCF fish 2	214 - 720 (BCF)
BCF other aquatic organisms 1	20 (BCF)
Log Pow	3.39 - 3.62 (Experimental value)

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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).

12.4. Mobility in soil

1,4-Dichlorobenzene-d4 (3855-82-1)	
Surface tension	0.03 N/m (55 °C)

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.

12.5. Other adverse effects

Other 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.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN2810 Toxic, liquids, organic, n.o.s. (Chrysene-d12), 6.1, III
UN-No.(DOT) : 2810
DOT NA no. : UN2810
Proper Shipping Name (DOT) : Toxic, liquids, organic, n.o.s.
Class (DOT) : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132
Hazard labels (DOT) : 6.1 - Poison



DOT Symbols : G - Identifies PSN requiring a technical name
Packing group (DOT) : III - Minor Danger
DOT Special Provisions (49 CFR 172.102) : IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). 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, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
DOT Packaging Exceptions (49 CFR 173.xxx) : 153
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

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Additional information

Emergency Response Guide (ERG) Number : 153

Other information : No supplementary information available.

ADR

Transport document description : UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (dichloromethane(75-09-2)), 6.1, III, (E)

Packing group (ADR) : III

Class (ADR) : 6.1 - Toxic substances

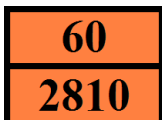
Hazard identification number (Kemler No.) : 60

Classification code (ADR) : T1

Hazard labels (ADR) : 6.1 - Toxic substances



Orange plates :



Tunnel restriction code (ADR) : E

LQ : 5I

Excepted quantities (ADR) : E1

Transport by sea

UN-No. (IMDG) : 2810

Proper Shipping Name (IMDG) : TOXIC LIQUID, ORGANIC, N.O.S.

Class (IMDG) : 6.1 - Toxic substances

Packing group (IMDG) : III - substances presenting low danger

Air transport

UN-No. (IATA) : 2810

Proper Shipping Name (IATA) : Toxic liquid, organic, n.o.s.

Class (IATA) : 6.1 - Toxic Substances

Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

1,4-Dichlorobenzene-d4 (3855-82-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
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Chrysene-d12 (1719-03-5)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

dichloromethane (75-09-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

EPA TSCA Regulatory Flag	R - R - indicates a substance that is the subject of a TSCA section 6 risk management rule.
CERCLA RQ	1000 lb
SARA Section 313 - Emission Reporting	1 %

15.2. International regulations

CANADA

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1,4-Dichlorobenzene-d4 (3855-82-1)

Listed on the Canadian DSL (Domestic Substances List)

Chrysene-d12 (1719-03-5)

dichloromethane (75-09-2)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Chrysene-d12 (1719-03-5)

dichloromethane (75-09-2)

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

Carc. 1A H350

Aquatic Chronic 3 H412

Full text of H statements : see section 16

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

Carc.Cat.3; R40

R52/53

Full text of R-phrases: see section 16

15.2.2. National regulations

1,4-Dichlorobenzene-d4 (3855-82-1)

Listed on IARC (International Agency for Research on Cancer)

Listed as carcinogen on NTP (National Toxicology Program)

Listed on EPA Hazardous Air Pollutant (HAPS)

Chrysene-d12 (1719-03-5)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

dichloromethane (75-09-2)

Listed on IARC (International Agency for Research on Cancer)

Listed as carcinogen on NTP (National Toxicology Program)

Listed on EPA Hazardous Air Pollutant (HAPS)

15.3. US State regulations

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U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No

1,4-Dichlorobenzene-d4 (3855-82-1)

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)
Yes	No	No	No	

Chrysene-d12 (1719-03-5)

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	No	No	No	

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dichloromethane (75-09-2)				
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)
Yes	No	No	No	

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.

Hazard Rating

PHV SDS US

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