

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

#### 1.1. Product identifier

Product form : Mixture  
Product name : 4,4'-DDT/Endin Mix  
Product code : AL0-101647  
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](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  
Skin Irrit. 2 H315  
Repr. 2 H361  
STOT SE 3 H336  
STOT RE 2 H373  
Aquatic Acute 1 H400  
Aquatic Chronic 2 H411

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

Repr.Cat.3; R62  
F; R11  
Xn; R48/20  
Xi; R38  
N; R51/53  
R67

Full text of R-phrases: see section 16

##### Adverse physicochemical, human health and environmental effects

No additional information available

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### 2.2. Label elements

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

Hazard pictograms (CLP) :



Signal word (CLP) :

Hazard statements (CLP) :

Precautionary statements (CLP) :

- Danger
- H225 - Highly flammable liquid and vapor  
H315 - Causes skin irritation  
H336 - May cause drowsiness or dizziness  
H361 - Suspected of damaging fertility or the unborn child  
H373 - May cause damage to organs through prolonged or repeated exposure  
H410 - Very toxic to aquatic life with long lasting effects
- 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  
P271 - Use only outdoors or in a well-ventilated area  
P273 - Avoid release to the environment  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P308+P313 - IF exposed or concerned: Get medical advice/attention  
P332+P313 - If skin irritation occurs: Get medical advice/attention  
P362+P364 - Take off contaminated clothing and wash it before reuse  
P370+P378 - In case of fire: Use media other than water to extinguish  
P391 - Collect spillage  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed  
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]
hexane (Component)	(CAS No) 110-54-3 (EC-No.) 203-777-6 (EC index no) 601-037-00-0	99.96	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361f STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
4,4'-DDT (Component)	(CAS No) 50-29-3 (EC-No.) 200-024-3 (EC index no) 602-045-00-7	0.02	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Carc. 2, H351 STOT RE 1, H372 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)
endrin (Component)	(CAS No) 72-20-8 (EC-No.) 200-775-7 (EC index no) 602-051-00-X	0.02	Acute Tox. 1 (Oral), H300 Acute Tox. 1 (Dermal), H310 Aquatic Acute 1, H400 (M=1000) Aquatic Chronic 1, H410 (M=1000)
Name	Product identifier	Specific concentration limits	
hexane (Component)	(CAS No) 110-54-3 (EC-No.) 203-777-6 (EC index no) 601-037-00-0	(C >= 5) STOT RE 2, H373	

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### 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   | : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.  |
| First-aid measures after skin contact | : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Consult a doctor/medical service. Get medical advice/attention. |
| 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 drowsiness or dizziness. |
| Symptoms/effects after skin contact | : Causes skin irritation.            |

#### 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. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. |
| 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 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. |

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Incompatible materials : Direct sunlight. Heat sources.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 4,4'-DDT (50-29-3)

USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
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### 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.

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### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

May release flammable gases.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

4,4'-DDT (50-29-3)	
LD50 oral rat	87 mg/kg
LD50 dermal rabbit	300 mg/kg
ATE CLP (oral)	87 mg/kg body weight
ATE CLP (dermal)	300 mg/kg body weight

endrin (72-20-8)	
LD50 oral rat	3 mg/kg (Rat)
LD50 dermal rat	12 mg/kg (Rat)
LD50 dermal rabbit	60 mg/kg (Rabbit)
ATE CLP (oral)	3 mg/kg body weight
ATE CLP (dermal)	12 mg/kg body weight

hexane (110-54-3)	
LD50 oral rat	16000 mg/kg body weight (Rat; Equivalent or similar to OECD 401; Experimental value)
LD50 dermal rabbit	> 3350 mg/kg body weight (Rabbit; Read-across; Equivalent or similar to OECD 402)
ATE CLP (oral)	16000 mg/kg body weight

Skin corrosion/irritation : Causes skin irritation.  
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 : Not classified  
Based on available data, the classification criteria are not met  
May cause cancer  
Reproductive toxicity : Suspected of damaging fertility or the unborn child.  
Specific target organ toxicity – single exposure : May cause drowsiness or dizziness.  
Specific target organ toxicity – repeated exposure : May cause damage to organs through prolonged or repeated exposure.  
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

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

4,4'-DDT (50-29-3)	
LC50 fish 1	0.01 mg/l Pimephales promelas (fathead minnow) 96 h
LC50 other aquatic organisms 1	0.0034 mg/l Oncorhynchus mykiss (rainbow trout) 96 h
EC50 Daphnia 1	0.00108 mg/l Immobilization - Daphnia magna (Water flea) 48 h
LC50 fish 2	0.01 mg/l Lepomis macrochirus (Bluegill) 96 h
LOEC (acute)	150 mg/l Oncorhynchus mykiss (rainbow trout) 3 d
NOEC (acute)	113 mg/l Oncorhynchus mykiss (rainbow trout) 3 d

endrin (72-20-8)	
LC50 fish 2	0.0006 mg/l (LC50; 96 h)
EC50 Daphnia 2	0.0042 mg/l (EC50; 48 h)

hexane (110-54-3)	
LC50 fish 1	2.5 mg/l (LC50; 96 h)

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<b>hexane (110-54-3)</b>	
EC50 Daphnia 1	2.1 mg/l (EC50; 48 h)
Threshold limit algae 2	26 mg/l (EbC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system)

### 12.2. Persistence and degradability

<b>4,4'-DDT/Endin Mix</b>	
Persistence and degradability	May cause long-term adverse effects in the environment.
<b>endrin (72-20-8)</b>	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil.
<b>hexane (110-54-3)</b>	
Persistence and degradability	Readily biodegradable in water. Photooxidation in water. easily degradable in the soil.
ThOD	3.52 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.63 (Literature study)

### 12.3. Bioaccumulative potential

<b>4,4'-DDT/Endin Mix</b>	
Bioaccumulative potential	Not established.
<b>4,4'-DDT (50-29-3)</b>	
BCF fish 1	46670 Oncorhynchus mykiss (rainbow trout) 20 d
Log Pow	6.91
<b>endrin (72-20-8)</b>	
BCF fish 1	15000 (BCF)
BCF fish 2	6400 (BCF)
BCF other aquatic organisms 1	500 - 2780 (BCF)
BCF other aquatic organisms 2	1920 (BCF; 50 h)
Log Pow	4.56 - 5.2 (Experimental value)
Bioaccumulative potential	High potential for bioaccumulation (BCF > 5000).
<b>hexane (110-54-3)</b>	
BCF fish 1	501.187 (BCF; Other; Pimephales promelas)
Log Pow	3.5 - 3.94 (Calculated)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

### 12.4. Mobility in soil

<b>endrin (72-20-8)</b>	
Ecology - soil	Toxic to flora. Toxic to fauna. Toxic to bees.
<b>hexane (110-54-3)</b>	
Surface tension	0.018 N/m (25 °C; 1 g/l)
Log Koc	Koc,2187.76; QSAR; log Koc; 3.34; QSAR

### 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) : 1993  
UN-No. (IATA) : 1993  
UN-No. (IMDG) : 1993  
UN-No. (ADN) : 1993

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### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : FLAMMABLE LIQUID, N.O.S.  
Proper Shipping Name (IATA) : Flammable liquid, n.o.s.  
Proper Shipping Name (IMDG) : FLAMMABLE LIQUID, N.O.S.  
Proper Shipping Name (ADN) : FLAMMABLE LIQUID, N.O.S.  
Transport document description (ADR) : UN 1993 FLAMMABLE LIQUID, N.O.S., 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS

### 14.3. Packing group

Class (ADR) : 3  
Classification code (ADR) : F1  
Class (IATA) : 3  
Class (IMDG) : 3  
Class (ADN) : 3  
Classification code (ADN) : F1  
Hazard labels (ADR) : 3



Hazard labels (IATA) : 3



Hazard labels (IMDG) : 3



Hazard labels (ADN) : 3



### 14.4. Packing group

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

### 14.5. Environmental hazards

Dangerous for the environment :



Other information : No supplementary information available.

### 14.6. Special precautions for user

#### 14.6.1. Overland transport

Hazard identification number (Kemler No.) : 33  
Classification code (ADR) : F1  
Orange plates :



Special provision (ADR) : 274, 601, 640C  
Transport category (ADR) : 2

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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) : TP1, TP8, TP28  
EmS-No. (Fire) : F-E  
EmS-No. (Spillage) : S-E  
Stowage category (IMDG) : B

### 14.6.3. Air transport

CAO packing instructions (IATA) : 364  
CAO max net quantity (IATA) : 60L  
PCA packing instructions (IATA) : 353  
PCA Limited quantities (IATA) : Y341  
PCA limited quantity max net quantity (IATA) : 1L  
PCA max net quantity (IATA) : 5L  
PCA Excepted quantities (IATA) : E2  
Special provision (IATA) : A3  
ERG code (IATA) : 3H

### 14.6.4. Inland waterway transport

Special provision (ADN) : 274, 601, 640C  
Limited quantities (ADN) : 1 L  
Excepted quantities (ADN) : E2  
Carriage permitted (ADN) : T  
Equipment required (ADN) : PP, EX, A  
Ventilation (ADN) : VE01  
Number of blue cones/lights (ADN) : 1  
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 REACH 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

### 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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