

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : PDO-7043

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Smart Chemical Solutions, LLC
3505 Olsen Blvd
Suite 201
Amarillo, TX 79109
T (806) 367-8031

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 1	H224	Extremely flammable liquid and vapor
Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Acute toxicity (inhalation:dust,mist) Category 4	H332	Harmful if inhaled
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2	H319	Causes serious eye irritation
Specific target organ toxicity — Single exposure, Category 3, Narcosis	H336	May cause drowsiness or dizziness
Full text of H statements : see section 16		

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H361 - Suspected of damaging fertility or the unborn child
H370 - Causes damage to organs
H336 - May cause drowsiness or dizziness
H320 - Causes eye irritation
H302 - Harmful if swallowed
H224 - Extremely flammable liquid and vapor

Precautionary statements (GHS US) :

P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
P403+P235 - Store in a well-ventilated place. Keep cool.
P370+P378 - In case of fire: Use media other than water to extinguish.
P331 - Do NOT induce vomiting.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

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P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

150% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)

90% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Toluene	CAS-No.: 108-88-3	40 – 80	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Acute 2, H401
2-Butoxyethanol	CAS-No.: 111-76-2	30 – 60	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319
n-Hexane	CAS-No.: 110-54-3	5 – 10	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Acute 2, H401 Aquatic Chronic 2, H411

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several 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	: Rinse mouth. Call a poison center/doctor/physician if you feel unwell.

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4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : May cause drowsiness or dizziness.
Symptoms/effects after skin contact : Irritation.
Symptoms/effects after eye contact : Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Specific hazards arising from the chemical

Fire hazard : Extremely flammable liquid and vapor.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

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

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
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.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes.
- Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Ground/bond container and receiving equipment.
- Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Toluene (108-88-3)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Toluene
ACGIH OEL TWA [ppm]	20 ppm
Remark (ACGIH)	TLV® Basis: CNS, visual & hearing impair; female repro system eff; pregnancy loss. Notations: OTO; A4 (Not classifiable as a Human Carcinogen); BEI
Regulatory reference	ACGIH 2022
USA - ACGIH - Biological Exposure Indices	
Local name	TOLUENE
BEI	0.3 mg/g Kreatinin Parameter: o-Cresol (with hydrolysis) - Medium: urine - Sampling time: End of shift - Notations: B 0.03 mg/l Parameter: Toluene - Medium: urine - Sampling time: End of shift 0.02 mg/l Parameter: Toluene - Medium: blood - Sampling time: Prior to last shift of workweek
Regulatory reference	ACGIH 2022
USA - OSHA - Occupational Exposure Limits	
Local name	Toluene
OSHA PEL TWA [2]	200 ppm
OSHA PEL C [ppm]	300 ppm
Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift	500 ppm 10 mins.
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-2
n-Hexane (110-54-3)	
USA - ACGIH - Occupational Exposure Limits	
Local name	n-Hexane
ACGIH OEL TWA [ppm]	50 ppm

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n-Hexane (110-54-3)

Remark (ACGIH)	TLV® Basis: CNS impair; peripheral neuropathy; eye irr. Notations: Skin; BEI
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Regulatory reference	ACGIH 2022
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USA - ACGIH - Biological Exposure Indices

Local name	n-HEXANE
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BEI	0.5 mg/l Parameter: 2,5-Hexanedione (without hydrolysis) - Medium: urine - Sampling time: End of shift
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Regulatory reference	ACGIH 2022
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USA - OSHA - Occupational Exposure Limits

Local name	n-Hexane
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OSHA PEL TWA [1]	1800 mg/m ³
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OSHA PEL TWA [2]	500 ppm
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Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
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8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Wear respiratory protection.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Clear.
Color : amber

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Odor	: There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: Aromatic odour Petroleum-like odour Mild odour
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: 145 – 165
Flash point	: 32 °F
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.8 – 0.85
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable liquid and vapor.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Harmful if inhaled.

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ATE US (oral)	833.333 mg/kg body weight
ATE US (dust, mist)	1.5 mg/l/4h
Unknown acute toxicity (GHS US)	150% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal) 90% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

Toluene (108-88-3)

LD50 oral rat	5580 mg/kg body weight (Equivalent or similar to EU Method B.1, Rat, Male, Experimental value, Oral, 7 day(s))
LD50 dermal rabbit	> 5000 mg/kg body weight (24 h, Rabbit, Male, Experimental value, Dermal)
LC50 Inhalation - Rat	28.1 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours))
LC50 Inhalation - Rat (Vapours)	> 20 mg/l Source: ECHA
ATE US (oral)	5580 mg/kg body weight

n-Hexane (110-54-3)

LD50 oral rat	16000 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral)
LD50 dermal rat	> 2000 mg/kg Source: ECHA
LD50 dermal rabbit	> 3350 mg/kg body weight (Equivalent or similar to OECD 402, 4 h, Rabbit, Male, Read-across, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 17.6 mg/l air (Equivalent or similar to OECD 403, 24 h, Rat, Male, Experimental value, Inhalation (vapours))
ATE US (oral)	16000 mg/kg body weight

2-Butoxyethanol (111-76-2)

LD50 dermal rat	> 2000 mg/kg Source: ECHA
ATE US (oral)	500 mg/kg body weight
ATE US (dust, mist)	1.5 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.

n-Hexane (110-54-3)

pH	7 (0.001 %, 25 °C)
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Serious eye damage/irritation : Causes serious eye irritation.

Toluene (108-88-3)

pH	No data available in the literature
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n-Hexane (110-54-3)

pH	7 (0.001 %, 25 °C)
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Respiratory or skin sensitization : Not classified

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Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Toluene (108-88-3)

STOT-single exposure : May cause drowsiness or dizziness.

n-Hexane (110-54-3)

STOT-single exposure : May cause drowsiness or dizziness.

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Toluene (108-88-3)

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

n-Hexane (110-54-3)

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified
Viscosity, kinematic : No data available

SECTION 12: Ecological information

12.1. Toxicity

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

Toluene (108-88-3)

LC50 - Fish [1] : 5.5 mg/l (96 h, Oncorhynchus kisutch, Flow-through system, Fresh water, Experimental value, Lethal)

EC50 - Crustacea [1] : 3.78 mg/l Source: ECHA

n-Hexane (110-54-3)

LC50 - Fish [1] : > 1 mg/l Source: ECHA

2-Butoxyethanol (111-76-2)

LC50 - Fish [1] : 1474 mg/l Source: ECHA

EC50 - Crustacea [1] : 1800 mg/l Source: ECHA

EC50 72h - Algae [1] : 911 mg/l Source: ECHA

12.2. Persistence and degradability

Toluene (108-88-3)

Persistence and degradability : Readily biodegradable in water.

Biochemical oxygen demand (BOD) : 2.15 g O₂/g substance

Chemical oxygen demand (COD) : 2.52 g O₂/g substance

ThOD : 3.13 g O₂/g substance

BOD (% of ThOD) : 0.69

n-Hexane (110-54-3)

Persistence and degradability : Biodegradable in the soil. Readily biodegradable in water.

ThOD : 3.52 g O₂/g substance

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12.3. Bioaccumulative potential

Toluene (108-88-3)

BCF - Fish [1]	90 (72 h, Leuciscus idus, Static system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	2.73 (Experimental value, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

n-Hexane (110-54-3)

BCF - Fish [1]	501.187 (Pimephales promelas, Calculated value)
Partition coefficient n-octanol/water (Log Pow)	4 (Experimental value, Equivalent or similar to OECD 107, 20 °C)
Bioaccumulative potential	Potential for bioaccumulation (4 ≤ Log Kow ≤ 5).

2-Butoxyethanol (111-76-2)

Partition coefficient n-octanol/water (Log Pow)	0.81 Source: ECHA
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12.4. Mobility in soil

Toluene (108-88-3)

Surface tension	27.73 mN/m (25 °C, 0.05 %)
Ecology - soil	Low potential for adsorption in soil.

n-Hexane (110-54-3)

Mobility in soil	2187.76 Source: ECHA
Surface tension	17.89 mN/m (25 °C, 1 g/l)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.34 (log Koc, QSAR)
Ecology - soil	Low potential for mobility in soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information : Flammable vapors may accumulate in the container.




SECTION 14: Transport information

DOT	IMDG	IATA
14.1. UN number		
1993	1993	1993
14.2. Proper Shipping Name		
Flammable liquids, n.o.s. (Toluene)	FLAMMABLE LIQUID, N.O.S. (Toluene)	Flammable liquid, n.o.s. (Toluene)

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DOT	IMDG	IATA
14.3. Transport hazard class(es)		
3	3	3
		
14.4. Packing group		
II	II	II
14.5. Environmental hazards		
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No
No supplementary information available		

14.6. Special precautions for user

DOT	
UN-No.(DOT)	: UN1993
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..... 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. TP8 - A portable tank having a minimum test pressure of 1.5 bar (150 kPa) may be used when the flash point of the hazardous material transported is greater than 0 C (32 F). 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)	: 150
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 60 L
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.
IMDG	
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, TP28, TP8

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EmS-No. (Fire) : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS
EmS-No. (Spillage) : S-E - SPILLAGE SCHEDULE Echo - FLAMMABLE LIQUIDS, FLOATING ON WATER
Stowage category (IMDG) : B

IATA

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

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. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

n-Hexane	CAS-No. 110-54-3	5 – 10%
2-Butoxyethanol	CAS-No. 111-76-2	30 – 60%

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Toluene	CAS-No. 108-88-3	40 – 80%
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Toluene (108-88-3)

Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ	1000 lb
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15.2. International regulations

CANADA

Toluene (108-88-3)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

Toluene (108-88-3)


Listed on INSQ (Mexican National Inventory of Chemical Substances)

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15.3. US State regulations

 **WARNING:** This product can expose you to Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

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Full text of H-phrases	
H224	Extremely flammable liquid and vapor
H227	Combustible liquid
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness

Safety Data Sheet (SDS), USA