

SAFETY DATA SHEET

Solvent Blend 19455



Section 1. Identification

GHS product identifier : Solvent Blend 19455
Synonyms : Petroleum hydrocarbon solvent; Camping Fuel; CITGO® Material Code: 19455
Code : 19455
MSDS # : 19455

Supplier's details : CITGO Petroleum Corporation
1701 Golf Road, Suite 1-1101
Rolling Meadows, IL 60008-4295
custsol@citgo.com

Emergency telephone number : Technical Contact: (847) 734-7630
(8am - 4pm CT M-F)
Medical Emergency: (832) 486-4700
CHEMTREC Emergency: (800) 424-9300
(United States Only)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
TOXIC TO REPRODUCTION: INHALATION [Fertility] - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Narcotic effects] - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): ORAL - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): INHALATION - Category 2
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms :



Signal word :

Hazard statements :

Danger
Highly flammable liquid and vapor.
Causes skin and eye irritation.
Suspected of damaging fertility if inhaled.
May be fatal if swallowed and enters airways.
May cause drowsiness and dizziness.
May cause damage to organs through prolonged or repeated exposure if inhaled.
May cause damage to organs through prolonged or repeated exposure if swallowed.

Precautionary statements

Prevention :

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash hands thoroughly after handling.

Section 2. Hazards identification

Response	: Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	: Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Substance
Other means of identification	: Petroleum hydrocarbon solvent; Camping Fuel; CITGO® Material Code: 19455

CAS number/other identifiers

CAS number	: Mixture
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Ingredient name	%	CAS number
C7-C8 Alkanes	30 - 60	**
n-hexane	10 - 30	110-54-3
Hexane, other isomers	10 - 30	*
Heptane	5 - 10	142-82-5
Methylcyclopentane	5 - 10	96-37-7
C7-C8 Cycloalkanes	3 - 7	**
C9-C15 Alkanes	3 - 7	**
C9-C15 Cycloalkanes	1 - 5	**
Cyclohexane	0.5 - 1.5	110-82-7

* = Various ** = Mixture *** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that gas or vapor is still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that gas or vapor is still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Extinguishing media

Section 5. Fire-fighting measures

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary

Section 7. Handling and storage

measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Non equilibrium conditions may increase the fire hazard associated with this product. Always bond receiving containers to the fill pipe before and during loading. Always confirm that receiving container is properly grounded. Bonding and grounding alone may be inadequate to eliminate fire and explosion hazards. Carefully review operations that may increase the risks such as tank and container filling, tank cleaning, sampling, gauging, loading, filtering, mixing, agitation, etc. In addition to bonding and grounding, efforts to mitigate the hazards may include, but are not limited to, ventilation, inerting and/or reduction of transfer velocities. Always keep nozzle in contact with the container throughout the loading process. Do NOT fill any portable container in or on a vehicle.

Advice on general occupational hygiene

- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

- : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
C7-C8 Alkanes	ACGIH TLV (United States).
n-hexane	TWA: 1500 mg/m ³
	ACGIH TLV (United States, 4/2014). Absorbed through skin.
	TWA: 50 ppm 8 hours.
	OSHA PEL (United States, 2/2013).
	TWA: 500 ppm 8 hours.
	TWA: 1800 mg/m ³ 8 hours.
Hexane, other isomers	ACGIH (United States).
	TWA: 500 ppm 8 hours.
	STEL: 1000 ppm 15 minutes.
Heptane	ACGIH TLV (United States, 4/2014).
	TWA: 400 ppm 8 hours.
	TWA: 1640 mg/m ³ 8 hours.
	STEL: 500 ppm 15 minutes.
	STEL: 2050 mg/m ³ 15 minutes.
	OSHA PEL (United States, 2/2013).
	TWA: 500 ppm 8 hours.
	TWA: 2000 mg/m ³ 8 hours.
Methylcyclopentane	ACGIH TLV (United States, 4/2014).
	TWA: 500 ppm 8 hours.
	TWA: 1760 mg/m ³ 8 hours.
	STEL: 1000 ppm 15 minutes.
	STEL: 3500 mg/m ³ 15 minutes.
C9-C15 Cycloalkanes	ACGIH TLV (United States).

Section 8. Exposure controls/personal protection

Cyclohexane

TWA: 400 ppm 8 hours. Form: Methylcyclohexane

ACGIH TLV (United States, 4/2014).

TWA: 100 ppm 8 hours.

OSHA PEL (United States, 2/2013).

TWA: 300 ppm 8 hours.

TWA: 1050 mg/m³ 8 hours.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. chemical splash goggles. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection

: Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

: Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Physical state

: Liquid.

Color

: Transparent, colorless.

Odor

: Characteristic hydrocarbon solvent odor.

pH

: Not available.

Boiling point/boiling range

: 71 to 135°C (160 to 275°F)

Flash point

: Closed cup: -21°C (-6°F) [Tagliabue.]

Evaporation rate

: <1 (butyl acetate = 1)

Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: 16 kPa (120 mm Hg) [room temperature]
Vapor density	: >1 [Air = 1]
Relative density	: 0.698
Density lbs/gal	: 5.82 lbs/gal
Gravity, °API	: Estimated 71 @ 60 F
Solubility	: Very slightly soluble in the following materials: cold water.
Viscosity	: Kinematic (room temperature): <0.01 cm ² /s (<1 cSt)
Conductivity	: <5 picosiemens/meter (unadditized)

Section 10. Stability and reactivity

Reactivity	: Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
n-hexane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LD50 Oral	Rat	15840 mg/kg	-
Hexane, other isomers	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
Heptane	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Cyclohexane	LC50 Inhalation Vapor	Mouse	70000 mg/m ³	2 hours
	LD50 Oral	Rat	6240 mg/kg	-
	LD50 Oral	Rat	12705 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LDLo Oral	Rabbit	5500 mg/kg	-

Conclusion/Summary	: n-hexane: n-Hexane is a CNS depressant and narcosis at elevated concentrations. Heptane: Heptane is a CNS depressant and narcosis at elevated concentrations. C9-C15 Alkanes: In animal studies utilizing mineral spirits containing up to 22% aromatics indicated that the acute central nervous system effects are reversible. Based on existing animal studies, the potential for persistent effects is not clear. Cyclohexane: Cyclohexane is a CNS depressant and narcosis at elevated concentrations.
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Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-hexane	Eyes - Mild irritant	Rabbit	-	10 milligrams	-

Skin : **C9-C15 Alkanes**: Primary dermal irritation studies (four hour exposure) in rabbits utilizing mineral spirits containing less than 2% aromatics resulted in slight to moderate skin irritation. In humans, mineral spirits have produced slight to moderate skin irritation particularly with evaporation from the skin is prevented.
Cyclohexane: Cyclohexane can cause eye, skin and mucous membrane irritation.

Eyes : No additional information.

Respiratory : **C9-C15 Alkanes**: Animal studies have demonstrated that mineral spirits produced mild respiratory tract irritation at elevated concentrations. Also, sensory respiratory tract irritation was evident by reduced breathing rates in the test animals in certain studies.

Sensitization

Skin : **C9-C15 Alkanes**: In animal studies utilizing mineral spirits containing up to 18%, aromatics skin sensitization is not evident.

Respiratory : No additional information.

Mutagenicity

Conclusion/Summary : **Heptane**: n-heptane was not mutagenic in the Salmonella/microsome (Ames) assay.
C9-C15 Alkanes: In vivo and in vitro studies on mineral spirits containing up to 22 % aromatics indicate that these products are not genotoxic.

Carcinogenicity

Conclusion/Summary : **C9-C15 Alkanes**: The National Toxicology Program (NTP) conducted two-year carcinogenicity studies in rats and mice with Stoddard Solvent IIC (less than 2% aromatics). The studies indicated that there was some evidence of carcinogenic activity in male rats (adrenal medulla neoplasms and renal tubule adenoma) but no evidence of carcinogenic activity in female rats. Further, there was equivocal evidence of carcinogenic activity in female mice (hepatocellular adenoma) but no evidence of carcinogenic activity in male mice. A low carcinogenic potential is suggested by a lack of genotoxic potential identified in in vivo and in vitro genetic toxicity tests (with and without metabolic activation).

Reproductive toxicity

Conclusion/Summary : **n-hexane**: In laboratory studies, prolonged exposure to elevated concentrations of n-hexane was associated with decreased sperm count and degenerative changes in the testicles of rats.
C9-C15 Alkanes: There were no treatment-related effects on pregnancy rate, mortality or gross post mortem observations in animal studies utilizing mineral spirits containing less than 2% aromatics.

Teratogenicity

Conclusion/Summary : **C9-C15 Alkanes**: There were no treatment-related effects on pregnancy rate, mortality or gross post mortem observations in animal studies utilizing mineral spirits containing less than 2% aromatics.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
C7-C8 Alkanes	Category 3	Not applicable.	Narcotic effects
n-hexane	Category 3	Not applicable.	Narcotic effects
Hexane, other isomers	Category 3	Not applicable.	Narcotic effects
Heptane	Category 3	Not applicable.	Narcotic effects
Methylcyclopentane	Category 3	Not applicable.	Narcotic effects
C7-C8 Cycloalkanes	Category 3	Not applicable.	Narcotic effects
C9-C15 Alkanes	Category 3	Not applicable.	Narcotic effects
C9-C15 Cycloalkanes	Category 3	Not applicable.	Narcotic effects
Cyclohexane	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
n-hexane	Category 2	Oral Inhalation	Not determined
Hexane, other isomers	Category 2	Inhalation	Not determined nervous system

Aspiration hazard

Name	Result
C7-C8 Alkanes	ASPIRATION HAZARD - Category 1
n-hexane	ASPIRATION HAZARD - Category 1
Hexane, other isomers	ASPIRATION HAZARD - Category 1
Heptane	ASPIRATION HAZARD - Category 1
Methylcyclopentane	ASPIRATION HAZARD - Category 1
C7-C8 Cycloalkanes	ASPIRATION HAZARD - Category 1
C9-C15 Alkanes	ASPIRATION HAZARD - Category 1
C9-C15 Cycloalkanes	ASPIRATION HAZARD - Category 1
Cyclohexane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Potential chronic health effects

- General** : May cause damage to organs through prolonged or repeated exposure if inhaled or swallowed.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : Suspected of damaging fertility if inhaled.

Section 11. Toxicological information

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
n-hexane	Acute LC50 2500 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Heptane	Acute EC50 1.5 mg/l	Daphnia - Daphnia magna	48 hours
	Acute LC50 4 mg/l	Fish - Carassius auratus	24 hours
	Acute LC50 375000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
	Acute LC50 4924 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
Cyclohexane	Acute LC50 4530 µg/l Fresh water	Fish - Pimephales promelas	96 hours

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
n-hexane	4	501.187	high
Heptane	4.66	552	high
Methylcyclopentane	3.37	-	low
Cyclohexane	3.44	167	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification : D001, D018

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN 1268	UN1268	UN1268
UN proper shipping name	UN1268, Petroleum Distillates, n. o.s. (Naphtha Solvent, Heptane), 3, PG II RQ n-Hexane	PETROLEUM DISTILLATES, N. O.S. (Naphtha Solvent, Heptane), 3, PG II	PETROLEUM DISTILLATES, N. O.S. (Naphtha Solvent, Heptane), 3, PG II

Section 14. Transport information

Transport hazard class(es)	3 	3  	3 
Packing group	II	II	II
Environmental hazards	No.	Yes.	No.
Additional information	Reportable quantity 26809 lbs / 12171.3 kg [4606.5 gal / 17437.4 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 12(b) one-time export:** Nonane, all isomers
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 307: Benzene; Toluene; Ethylbenzene; Naphthalene
Clean Water Act (CWA) 311: Cyclohexane; Benzene; Toluene; Ethylbenzene; Xylenes, mixed isomers; Naphthalene
 This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
 Immediate (acute) health hazard
 Delayed (chronic) health hazard

Composition/information on ingredients

Section 15. Regulatory information

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
C7-C8 Alkanes	Yes.	No.	No.	Yes.	No.
n-hexane	Yes.	No.	No.	Yes.	Yes.
Hexane, other isomers	Yes.	No.	No.	Yes.	Yes.
Heptane	Yes.	No.	No.	Yes.	No.
Methylcyclopentane	Yes.	No.	No.	Yes.	No.
C7-C8 Cycloalkanes	Yes.	No.	No.	Yes.	No.
C9-C15 Alkanes	Yes.	No.	No.	Yes.	No.
C9-C15 Cycloalkanes	Yes.	No.	No.	Yes.	No.
Cyclohexane	Yes.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	n-hexane	110-54-3	<20
	Cyclohexane	110-82-7	<2
Supplier notification	n-hexane	110-54-3	<20
	Cyclohexane	110-82-7	<2

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: n-hexane; HEPTANE (N-HEPTANE); METHYLCYCLOPENTANE; Cyclohexane; NONANE
- New York** : The following components are listed: Hexane; Cyclohexane; Benzene, hexahydro-
- New Jersey** : The following components are listed: n-hexane; n-HEPTANE; HEPTANE; METHYL CYCLOPENTANE; CYCLOPENTANE, METHYL-; Cyclohexane; NONANE
- Pennsylvania** : The following components are listed: n-hexane; HEPTANE; CYCLOPENTANE, METHYL-; Cyclohexane; NONANE

California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Benzene	<0.1	Yes.	Yes.	6.4 µg/day (ingestion) 13 µg/day (inhalation)	24 µg/day (ingestion) 49 µg/day (inhalation)
Toluene	<0.1	No.	Yes.	No.	7000 µg/day (ingestion)
Ethylbenzene	<0.01	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
Naphthalene	<0.001	Yes.	No.	Yes.	No.

International regulations

- International lists** :
- Australia inventory (AICS):** All components are listed or exempted.
 - China inventory (IECSC):** All components are listed or exempted.
 - Japan inventory:** All components are listed or exempted.
 - Korea inventory:** All components are listed or exempted.
 - Malaysia Inventory (EHS Register):** All components are listed or exempted.
 - New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.
 - Philippines inventory (PICCS):** All components are listed or exempted.
 - Taiwan inventory (CSNN):** All components are listed or exempted.
- Canada inventory** : All components are listed or exempted.

Section 15. Regulatory information

- EU Inventory** : All components are listed or exempted.
- WHMIS (Canada)** : Class B-2: Flammable liquid
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

Section 16. Other information

National Fire Protection Association (U.S.A.)



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History

Date of issue/Date of revision : 2/24/2015.

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

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