Conforms to ANSI Z400.1-2004 Standard

Material Safety Data Sheet

TRUFUEL

TruFuel

1. Product and company identification

Product name : TruFuel

Synonym : TruFuel50, TruFuel40, TruFuel, Pure Fuel

Material uses : Not available.

Supplier/Manufacturer : TruSouth Oil
10411 Highway 1
Shreveport, LA 71115
Tel: 318-795-3800
Fax: 318-795-3801
Email: lmassad@trusouthoil.com
Web Site: www.trusouthoil.com

MSDS authored by : KMK Regulatory Services Inc.

In case of emergency : (318) 795-3800

2. Hazards identification

Emergency overview

Physical state : Liquid.

Color : TruFuel 50:1 (Red), TruFuel 40:1 (Green), TruFuel, Pure Fuel(Clear)

Odor : Petroleum.

Signal word : DANGER!

Hazard statements : EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. HARMFUL OR FATAL IF SWALLOWED. CAN ENTER LUNGS AND CAUSE DAMAGE. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Precautionary measures : Keep away from heat, sparks and flame. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential acute health effects

Inhalation : Irritating to respiratory system.

Ingestion : Harmful if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage.

Skin : Irritating to skin.

Eyes : Irritating to eyes.

Potential chronic health effects

Chronic effects : Contains material that can cause target organ damage.

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 : No known significant effects or critical hazards.

Target organs : Contains material which may cause damage to the following organs: blood, kidneys, lungs, the reproductive system, liver, heart, peripheral nervous system, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Over-exposure signs/symptoms

2. Hazards identification

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Ingestion : Adverse symptoms may include the following:
nausea or vomiting

Skin : Adverse symptoms may include the following:
irritation
redness

Eyes : Adverse symptoms may include the following:
pain or irritation
watering
redness

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. Composition/information on ingredients

United States

Name	CAS number	%
Petroleum Distillates	-	98 - 99
Contains:		
Octane	111-65-9	>1
Pentane	109-66-0	>1
p-Xylene	106-42-3	>1
Toluene	108-88-3	>1
Heptane	142-82-5	>1
Butane	106-97-8	>1
Isopentane	78-78-4	>1
Distillates (petroleum), solvent-refined heavy paraffinic	64741-88-4	0 - 3
Additives	-	<0.005

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact : Immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 20 minutes. Get medical attention if symptoms occur.

Inhalation : Move exposed person to fresh air. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call medical doctor or poison control center immediately.

Notes to physician : No specific treatment. Treat symptomatically.

5. Fire-fighting measures

Flammability of the product : Extremely flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. Flammable Class IB.

Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

5. Fire-fighting measures

Hazardous decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

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.

6. Accidental release measures

Personal precautions : Shut off all ignition sources. No flares, smoking or flames in hazard area. Provide adequate ventilation. Put on appropriate personal protective equipment (see Section 8).

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 for cleaning up

Small spill : Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill : 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). Use spark-proof tools and explosion-proof equipment. 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.

7. Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). 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. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Keep away from heat, sparks and flame.

Storage : 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. 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.

8. Exposure controls/personal protection

United States

Ingredient	Exposure limits
Octane	**ACGIH TLV (United States, 2/2010).** TWA: 300 ppm 8 hour(s). **NIOSH REL (United States, 6/2009).** CEIL: 1800 mg/m³ 15 minute(s). CEIL: 385 ppm 15 minute(s). TWA: 350 mg/m³ 10 hour(s). TWA: 75 ppm 10 hour(s). **OSHA PEL (United States, 6/2010).** TWA: 2350 mg/m³ 8 hour(s). TWA: 500 ppm 8 hour(s).
Pentane	**ACGIH TLV (United States, 2/2010).** TWA: 600 ppm 8 hour(s). **NIOSH REL (United States, 6/2009).** CEIL: 1800 mg/m³ 15 minute(s). CEIL: 610 ppm 15 minute(s). TWA: 350 mg/m³ 10 hour(s). TWA: 120 ppm 10 hour(s). **OSHA PEL (United States, 6/2010).** TWA: 2950 mg/m³ 8 hour(s). TWA: 1000 ppm 8 hour(s).
p-Xylene	**ACGIH TLV (United States, 2/2010).** STEL: 651 mg/m³ 15 minute(s). STEL: 150 ppm 15 minute(s). TWA: 434 mg/m³ 8 hour(s). **NIOSH REL (United States, 6/2009).** STEL: 655 mg/m³ 15 minute(s). STEL: 150 ppm 15 minute(s). TWA: 435 mg/m³ 10 hour(s). TWA: 100 ppm 10 hour(s). **OSHA PEL (United States, 6/2010).** TWA: 435 mg/m³ 8 hour(s). TWA: 100 ppm 8 hour(s).
Toluene	**NIOSH REL (United States, 6/2009).** STEL: 560 mg/m³ 15 minute(s). STEL: 150 ppm 15 minute(s). TWA: 375 mg/m³ 10 hour(s). TWA: 100 ppm 10 hour(s). **OSHA PEL Z2 (United States, 11/2006).** AMP: 500 ppm 10 minute(s). CEIL: 300 ppm TWA: 200 ppm 8 hour(s). **ACGIH TLV (United States, 2/2010).** TWA: 20 ppm 8 hour(s).
Distillates (petroleum), solvent-refined heavy paraffinic	**ACGIH TLV (United States, 2/2010).** TWA: 5 mg/m³ 8 hour(s). Form: Inhalable fraction. **NIOSH REL (United States, 6/2009).** STEL: 10 mg/m³ 15 minute(s). Form: Mist TWA: 5 mg/m³ 10 hour(s). Form: Mist **OSHA PEL (United States, 6/2010).** TWA: 5 mg/m³ 8 hour(s). Form: Mist
Heptane	**ACGIH TLV (United States, 2/2010).** STEL: 2050 mg/m³ 15 minute(s). STEL: 500 ppm 15 minute(s). TWA: 1640 mg/m³ 8 hour(s). TWA: 400 ppm 8 hour(s). **NIOSH REL (United States, 6/2009).** CEIL: 1800 mg/m³ 15 minute(s). CEIL: 440 ppm 15 minute(s). TWA: 350 mg/m³ 10 hour(s). TWA: 85 ppm 10 hour(s). **OSHA PEL (United States, 6/2010).** TWA: 2000 mg/m³ 8 hour(s). TWA: 500 ppm 8 hour(s).
Butane	**ACGIH TLV (United States, 2/2010).** TWA: 1000 ppm 8 hour(s). **NIOSH REL (United States, 6/2009).** TWA: 1900 mg/m³ 10 hour(s). TWA: 800 ppm 10 hour(s). **OSHA PEL 1989 (United States, 3/1989).**

8. Exposure controls/personal protection

Isopentane	TWA: 800 ppm 8 hour(s). TWA: 1900 mg/m³ 8 hour(s). **ACGIH TLV (United States, 2/2010).** TWA: 600 ppm 8 hour(s).

Recommended monitoring procedures : Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : 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. Use explosion-proof ventilation equipment.

Hygiene measures : Ensure that eyewash stations and safety showers are close to the workstation location. 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.

Personal protection

Respiratory : Not required under normal conditions of use. 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. Ensure an MSHA/NIOSH-approved respirator or equivalent is used.

Hands : Use gloves appropriate for work or task being performed. Recommended: Natural rubber (latex).

Eyes : Safety eyewear should be used when there is a likelihood of exposure. Recommended: Safety glasses with side shields.

Skin : 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. Recommended: Lab coat.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

9. Physical and chemical properties

Physical state : Liquid.

Flash point : Closed cup: -42.778°C (-45°F) [Tagliabue.]

Auto-ignition temperature : 280°C (536°F)

Flammable limits : Lower: 1.4%
Upper: 7.6%

Color : TruFuel 50:1 (Red), TruFuel 40:1 (Green), TruFuel, Pure Fuel(Clear)

Odor : Petroleum.

Relative density : 0.72 @ 60°F

Vapor pressure : Reid Vapor Pressure 7.8 psi

Viscosity : <1 SUS @ 100°F

Solubility : Insoluble in the following materials: cold water and hot water.

10. Stability and reactivity

Chemical stability : The product is stable.

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 swallow.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials and acids.

Hazardous decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Octane	LC50 Inhalation Gas.	Rat	25260 ppm	4 hours
	LC50 Inhalation Vapor	Rat	118 g/m3	4 hours
Pentane	LC50 Inhalation Vapor	Rat	364 g/m3	4 hours
	LD50 Oral	Rat	>2000 mg/kg	-
p-Xylene	LC50 Inhalation Gas.	Rat	4550 ppm	4 hours
	LD50 Oral	Rat	3910 mg/kg	-
Toluene	LC50 Inhalation Vapor	Rat	49 g/m3	4 hours
	LD50 Oral	Rat	636 mg/kg	-
Heptane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	103 g/m3	4 hours
Butane	LC50 Inhalation Vapor	Rat	658000 mg/m3	4 hours
Isopentane	LC50 Inhalation Vapor	Rat	280000 mg/m3	4 hours

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Toluene	Eyes - Mild irritant	Rabbit	-	-	-
	Skin - Moderate irritant	Rabbit	-	-	-

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
p-Xylene	A4	3	-	-	-	-
Toluene	A4	3	-	-	-	-
Distillates (petroleum), solvent-refined heavy paraffinic	A4	-	-	-	-	-

IDLH : Not available.

Synergistic products : Not available.

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
p-Xylene	Acute EC50 3200 ug/L Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 5030 ug/L Fresh water	Daphnia - Daphnia magna - Neonate - <=24 hours	48 hours
	Acute LC50 2 ul/L Marine water	Fish - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling) - 6 g	96 hours
Toluene	Acute EC50 12500 ug/L Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 6000 ug/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 15.5 ppm Marine water	Crustaceans - Palaemonetes pugio - Adult	48 hours
	Acute LC50 5500 ug/L Fresh water	Fish - Oncorhynchus kisutch - Fry - 1 g	96 hours
	Chronic NOEC 28000 ug/L Fresh water	Daphnia - Daphnia magna - <=24 hours	48 hours
Heptane	Acute LC50 375000 ug/L Fresh water	Fish - Tilapia mossambica - 99 mm - 10 g	96 hours

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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

13. Disposal considerations

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.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN1993	FLAMMABLE LIQUIDS, N.O.S. (Octane)	3	II		-
IMDG Class	UN1993	FLAMMABLE LIQUIDS, N.O.S. (Octane)	3	II		-
IATA-DGR Class	UN1993	FLAMMABLE LIQUIDS, N.O.S. (Octane)	3	II		-

PG* : Packing group Exemption to the above classification may apply. **AERG :** 128

15. Regulatory information

HCS Classification : Flammable liquid
Irritating material
Target organ effects

U.S. Federal regulations :

TSCA 4(a) final test rules: Pentane; p-Xylene; Heptane
TSCA 8(a) PAIR: Pentane; p-Xylene; Heptane
TSCA 8(a) IUR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
TSCA 12(b) annual export notification: Pentane; p-Xylene; Heptane

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Octane; Pentane; p-Xylene; Toluene; Butane; Isopentane; Heptane
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Octane: Fire hazard; Pentane: Fire hazard, Immediate (acute) health hazard; p-Xylene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Toluene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Butane: Fire hazard, Sudden release of pressure; Isopentane: Fire hazard; Heptane: Fire hazard

Clean Water Act (CWA) 307: Toluene

Clean Water Act (CWA) 311: p-Xylene; Toluene

Clean Air Act (CAA) 112 regulated flammable substances: Pentane; Butane; Isopentane

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Listed

15. Regulatory information

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Listed

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	p-Xylene Toluene	106-42-3 108-88-3	10 - 30 10 - 30
Supplier notification	p-Xylene Toluene	106-42-3 108-88-3	10 - 30 10 - 30

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

State regulations

Massachusetts : The following components are listed: Octane; Pentane; p-Xylene; Toluene; Heptane; Butane; Isopentane

New York : The following components are listed: p-Xylene; Toluene

New Jersey : The following components are listed: Octane; Pentane; p-Xylene; Toluene; Heptane; Butane; Isopentane

Pennsylvania : The following components are listed: Octane; Pentane; p-Xylene; Toluene; Heptane; Butane; Isopentane

California Prop. 65

WARNING: This product contains 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
Toluene	No.	Yes.	No.	7000 µg/day (ingestion) 13000 µg/day (inhalation)

International regulations

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: Not determined.
Korea inventory: 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.

16. Other information

Label requirements : EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. HARMFUL OR FATAL IF SWALLOWED. CAN ENTER LUNGS AND CAUSE DAMAGE. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Hazardous Material Information System (U.S.A.) : **Health :** 2 * **Flammability :** 3 **Physical hazards :** 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

16. Other information

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) : **Health :** 2 **Flammability :** 3 **Instability :** 0

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History

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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.