


# TRICAN MATERIAL SAFETY DATA SHEET

## SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	<b>Trican Diluent</b>	<b>Code</b>
<b>Supplier</b>	Trican Well Service Ltd. 2900, 645 – 7 <sup>th</sup> Ave S.W. Calgary, Alberta, T2P 4G8 For Product Information/MSDS Call: 403-266-0202 or 403-723-3688 (8:00 AM - 5:00 PM CST, Monday – Friday)	<b>Revision Date</b> March 24, 2008
<b>Product Uses</b>	Heavy Oil Diluent	<b>Supersedes Date</b> October 12, 2006
<b>24 Hour Emergency Numbers</b>	CANUTEC 613-996-6666 (Canada 24 hours)	<b>Preparation Date</b> March 24, 2008
<b>WHMIS (Pictograms)</b> 		<b>WHMIS (Classification)</b> <b>B2</b> – Flammable Material <b>D2A</b> – Very toxic material causing other toxic effects.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the Material Safety Data Sheet contains all information required by the CPR.		

## SECTION 2. COMPOSITION AND INFORMATION ON INGREDIENTS

Name	CAS #	%	TLV	LD(50)	LC(50)*
Hydrocarbon (aromatic and Paraffinic hydrocarbons)	8002-05-9	>95	Not Applicable	Not Available	Not Available
Benzene	71-43-2	<1	TWA: 0.5 ppm STEL: 2.5 ppm	Oral, Rat 3.8 g/kg	Inhalation, Rat 1,000 ppm

Please consult with local authorities for acceptable provincial exposure limits since values can vary from jurisdiction to jurisdiction.  
\*All LC(50) are based on a four hour exposure unless otherwise noted.

## SECTION 3. HAZARDS IDENTIFICATION

<b>Hazard Summary</b>	May cause cancer. Highly Flammable. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin or if swallowed. Danger of serious damage to health by prolonged exposure. Irritating to eyes, respiratory system and skin. May cause harm to unborn child. Toxic to aquatic organisms. Harmful by inhalation. Harmful if swallowed.  Keep away from sources of ignition - No smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. This material and its container must be disposed of as hazardous waste. If swallowed do not induce vomiting: seek medical advice immediately and show this container or label. Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell seek medical advice immediately.
<b>Routes of Exposure</b>	Eyes, skin, inhalation and ingestion.
<b>Potential Acute Health Effects</b>	<p><b>Eyes Contact</b> Causes irritation. Will not injure eye tissue.</p> <p><b>Skin Contact/Absorption</b> Frequent or prolonged contact may irritate the skin and cause a rash (dermatitis).</p> <p><b>Inhalation</b> High vapor concentrations are irritating to eyes, nose throat and lungs. May cause headaches and dizziness; may be anesthetic and may cause central nervous system effects. Avoid breathing vapors or mists. Hydrogen Sulphide gas may be released and cause irritation, breathing failure, coma and death without any warning being sensed.</p> <p><b>Ingestion</b> Minimal Toxicity. Small amounts of this liquid, drawn into the lungs from swallowing or vomiting may cause severe health effects (e.g. bronchopneumonia or pulmonary edema).</p>
<b>Medical Conditions Aggravated by</b>	Not Available

<b>Exposure</b>	
<b>See Toxicological Information (Section 11)</b>	
<b>Additional Hazard Identification</b>	Not Available
<b>Remarks</b>	

<b>SECTION 4. FIRST AID MEASURES</b>	
<b>Skin Contact</b>	Flush contaminated area with water for at least 15 minutes. Remove contaminated clothing shoes and leather goods. If irritation persists seek medical attention.
<b>Eye Contact</b>	Flush eyes with water for at least 15 minutes. Obtain medical attention if irritation persists.
<b>Inhalation</b>	Remove source of contamination or remove victim to fresh air. If breathing has stopped begin artificial respiration immediately. Obtain medical attention immediately.
<b>Ingestion</b>	DO NOT induce vomiting. Rinse out the remaining contents of the mouth with either milk or water, WITHOUT swallowing the rinse. NEVER give anything by mouth to an unconscious person. Call a physician immediately.
<b>Notes to Physician</b>	Not Available
<b>Additional First Aid Remarks</b>	Not Available

<b>SECTION 5. FIRE AND EXPLOSION DATA</b>	
<b>Conditions of Flammability</b>	May be ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours may travel to source of ignition and flash back. Most vapours are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks, etc.). Vapour explosion hazard indoors, outdoors or in sewers. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water.
<b>Extinguishing Media</b>	Small Fires: Use carbon dioxide, dry chemical or foam. Large Fires: Water spray, fog or alcohol-resistant foam.
<b>Protective Clothing (Fire)</b>	Wear self contained breathing apparatus.
<b>Hazardous combustion Products</b>	Oxides of carbon, and sulphur.
<b>Sensitivity to Mechanical Impact</b>	This product is not sensitive to mechanical impact
<b>Sensitivity to Static Discharge</b>	Ground/bond containers during pumping and transferring to avoid static build up.
<b>Special Remarks on Fire Hazards</b>	Not Available


<b>SECTION 6. ACCIDENTAL RELEASE MEASURES</b>	
<b>Leak and Spill Procedures</b>	<p>Put on appropriate personal protective equipment. Keep personnel removed and upwind of spill. Shut off all ignition sources; no flares, smoking or flames in hazard area. Approach release from upwind. Shut off leak if it can be done safely. Contain spilled material. Keep out of waterways. Dike large spills and use a non-sparking or explosion proof means to transfer material to an appropriate container for disposal. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container. Note that flammable vapours may form an ignitable mixture with air. Vapours may travel considerable distances from spill and flash back if ignited. Waste must be disposed of in accordance with federal, provincial and local environmental control regulations.</p> <p>***</p> <p>Issue "hazard" warning. Eliminate all ignition sources. Isolate hazard area and restrict access. Try to work upwind of spill. Avoid direct contact with material. Wear NIOSH approved self-contained breathing apparatus (if applicable) and protective clothing.</p> <p>Prevent spilled material from entering sewers, watercourses or low-lying areas.</p> <p>Stop leak only if safe to do so. Dike and contain land spills with inert material (earth, clay or sand). For large spills remove by mechanical means and place in containers. Absorb residue or small spills with inert absorbent material and remove to non-leaking containers for disposal. Flush area with water to remove trace residue.</p> <p>Dispose of recovered materials as in section 13. Notify fire and environmental</p>

	agencies.  Provincial and federal regulations may require that environmental and/or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities.
<b>Additional Accidental Release Measures Remarks</b>	Not Available.

### SECTION 7. HANDLING AND STORAGE

<b>Handling Procedure and Equipment</b>	Put on appropriate personal protective equipment. Avoid contact with eyes, skin and clothing. Avoid breathing vapours or spray mists. Use only with adequate ventilation. Store in a dry, cool and well ventilated area. Keep away from heat, sparks and flame. Keep away from incompatibles. Keep container tightly closed and dry. To avoid fire or explosion, ground container equipment and personnel before handling product. *****  Maintain good personal hygiene. Wear appropriate personal protective equipment and avoid contact with skin, eyes or clothing. No smoking, eating or drinking allowed when using this product. Wash thoroughly after handling product. Avoid breathing vapours and prolonged or repeated contact with skin or eyes. Use adequate ventilation. Locate safety shower and eyewash station in use area.  Empty containers may contain product residue. Follow labeled warnings even after container is emptied. Do not cut, drill, grind or weld on or near container.  Air dry and then launder contaminated clothing prior to reuse. Store product-contaminated rags in container with tight-fitting lid.
<b>Storage Requirements</b>	Store in a cool, well-ventilated area away from incompatibles. Keep container tightly closed when not in use. Store in totally enclosed equipment, designed to avoid ignition and human contact. Store in an isolated building that is cool and well ventilated. Storage tanks should be above ground, over an area sealed on the bottom and diked to hold entire contents.
<b>Additional Accidental Release Measures Remarks</b>	Not Available

### SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

<b>Engineering Controls</b>	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours or particles below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
<b>Personal Protection</b>	<p>Personal Protective Equipment recommendations are based on anticipated known manufacturing and use conditions. These conditions are expected to result in only incidental exposure. A thorough review of the job tasks and conditions by a safety professional is recommended, however, to determine the level of personal protective equipment appropriate for these job tasks and conditions.</p> <p><b>Respirator</b> Respirator use is not expected to be necessary under normal conditions of use. In poorly ventilated areas, emergency situations or if exposure may or does exceed exposure limits use a NIOSH/MSHA approved atmosphere-supplying respirator or an air-purifying respirator for organic vapours.</p> <p><b>Hand</b> Nitrile or neoprene gloves.</p> <p><b>Eye</b> Chemical safety glasses or goggles and face shield.</p> <p><b>Body</b> Wear long sleeves to prevent repeated or prolonged skin contact.</p> <p><b>Feet</b> Stead toed, chemical resistant boots.</p> <p><b>Other</b> Emergency eyewash fountains and safety showers should be in the immediate vicinity of any potential exposure. Remove contaminated clothing and launder before reuse.</p>
<b>Protective Clothing (Pictograms)</b>	
<b>Additional Exposure Control Measures Remarks</b>	Not Available

<b>SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES</b>	
Physical State	Liquid
Odour and Appearance	Varies from mild pleasant hydrocarbon odour to mild rotten eggs; colourless to cola tint in colour.
Odour Threshold	Not Available
Specific Gravity	0.7 – 0.78
Flashpoint	10 – 20 °C (CC).
Upper Flammable Limit (% by volume)	Not Available
Lower Flammable Limit (% by volume)	Not Available
Autoignition Temperature	>400 °C (estimated)
Vapour Density (air=1)	2.5 @ 30 °C
Vapour Pressure	4.1 kPa
Evaporation Rate	Not Available
Boiling Point	- 80 - 350 °C
Freezing Point	Not Available
Pour Point	Not Available
pH	Not Available
Viscosity	Not Available
Solubility in Water	Essentially insoluble in water
Coefficient of Water/Oil	Not Available
Physical Chemical Comments	Not Available

<b>SECTION 10. STABILITY AND REACTIVITY DATA</b>	
Chemical Stability	Stable
Conditions of Instability	Not applicable
Incompatible Material	Heat, ignition, oxidizing agents.
Conditions of Reactivity	With incompatibles.
Hazardous Decomposition Products	Oxides of carbon and Sulphur.
Hazardous Polymerization	Will not occur.
Special Stability & Reactivity Remarks	Not Available

<b>SECTION 11. TOXICOLOGICAL INFORMATION</b>	
<b>Component Toxicological Information</b>	
<b>Acute Toxicity</b>	
1)) Hydrocarbon (aromatic and Parrafinic hydrocarbons) (8002-05-9)	Not Available
3) Benzene (71-43-2)	Oral (LD50): Acute: Rat 3.8 g/kg Vapour (LC50): Acute: Rat 1,000 ppm
<b>Effects of Acute Exposure</b>	<i>See Hazards Identification (Section 3)</i>
<b>Effects of Chronic Exposure</b>	Prolonged and repeated exposures may cause damage to the peripheral nervous system. Contains Benzene. Human health studies indicate prolonged and/or repeated overexposure to benzene may cause damage to the blood producing system and serious blood disorder, including leukemia.
<b>Irritancy of Product</b>	Irritation to eyes, and skin.
<b>Skin Sensitization</b>	Not Available
<b>Respiratory Sensitization</b>	Not Available
<b>Carcinogenicity</b>	Carcinogenic according to IARC, NTP and ACGIH
<b>Reproductive Toxicity</b>	Spontaneous abortion and stillbirth.
<b>Teratogenicity</b>	Not Available
<b>Embryotoxicity</b>	Not Available
<b>Mutagenicity</b>	Found to cause chromosome changes at concentrations that induced blood dyscrasias.
<b>Synergistic Products/Effects</b>	Not Available
<b>Other Adverse Effects</b>	Not Available

**SECTION 12. ECOLOGICAL INFORMATION**

<b>Ecotoxicity</b>	Not Available
<b>BOD5 and COD</b>	Not Available
<b>Biodegradable/OECD</b>	Not Available
<b>Toxicity of the Products of Biodegradation</b>	Not Available
<b>Special Remarks</b>	Do not allow product or run-off from fire control to enter storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. May be harmful to aquatic life.

**SECTION 13. DISPOSAL CONSIDERATIONS**

Responsibility for proper waste disposal rests with the generator of the waste. Dispose of any waste material in accordance with all applicable federal, provincial and local regulations.

**Additional Waste Remarks** Note that these regulations may also apply to empty containers, liners and rinsate. Processing, use, dilution or contamination of this product may cause its physical and chemical properties to change.

**SECTION 14. TRANSPORT INFORMATION****TDG Classification**

PETROLEUM CRUDE OIL, Class 3, UN1267, PG I



<b>Marine Pollutant</b>	Not applicable.
<b>Additional TDG Information</b>	Not applicable.
<b>Emergency Response Guide Page Number</b>	Guide No. 128

**SECTION 15. REGULATORY INFORMATION****Canadian Regulations**

This product had been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR. Class B2 Flammable, D2A Toxic.

**WHMI**

**Environmental Regulation** Not available.

**DSL Inventor** All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

**TSCA Inventory Status** All components are included or are exempted from listing on the US Toxic Substances Control Act Inventory.

This product contains the following components that are subject to the reporting requirements of TSCA Section 12(b) if exported from the United States. None

**International Regulations****European Union**

All components are included or are exempted from listing on the European Inventory of Existing Commercial Chemical Substances or the European List of Notified Chemical Substances.

**ILO Risk and Safety Phrases**

Risk Phrases: 45-11-20-22-23/24/25-36/37/38-48-51-61

May cause cancer. Highly Flammable. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin or if swallowed. Danger of serious damage to health by prolonged exposure. Irritating to eyes, respiratory system and skin. May cause harm to unborn child. Toxic to aquatic organisms. Harmful by inhalation. Harmful if swallowed.

Safety Phrases: 16-26-36-60-62 53-45

Keep away from sources of ignition - No smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. This material and its container must be disposed of as hazardous waste. If swallowed do not induce vomiting; seek medical advice immediately and show this container or label. Avoid exposure - obtain special

special instructions before use. In case of accident or if you feel unwell seek medical advice immediately.

Symbols: F, T  
Flammable. Toxic.

**Other Regulatory Information**

No further regulatory information is available.

**SECTION 16. OTHER INFORMATION**

**Other Special Considerations**      Format change; New issue

**Trican Well Service Ltd. Disclaimer**

*NOTE: The information on this MSDS is based on data, which is considered to be accurate. Trican Well Service Ltd., however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.*

*The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.*

*This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.*

END OF MATERIAL SAFETY DATA