

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	Trican Diluent	Code	1314
Supplier	Trican Well Service Ltd. 2900, 645 – 7 th 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 MST, Monday – Friday)	Revision Date	July 7, 2011
Product Uses	Heavy oil diluent	Supersedes Date	March 16, 2011
24 Hour Emergency Numbers	CANUTEC 613-996-6666 (Canada 24 hours)	Original Creation	October 9, 2006

SECTION 2. HAZARDS IDENTIFICATION

WHMIS (Pictograms)



Workplace Hazardous Material Information System Classification

B2 Flammable Liquid
D2A Very toxic material causing other toxic effects
D2B Toxic material causing other toxic effects

Hazard Summary

DANGER! HIGHLY FLAMMABLE. EYE AND SKIN IRRITANT. HARMFUL IF INHALED. ASPIRATION HAZARD. MAY CAUSE FETOTOXIC EFFECTS. MAY CAUSE CANCER.

Avoid excessive heat, open flames, sparks and ignition sources. Liquid can release vapors that readily form flammable mixtures at or above the flashpoint. Vapours are heavier than air and may travel considerable distances to a source of ignition and flash back. Vapours may spread along the ground and enter sewers, basements and other low lying spaces. Product will float on water.

Bond and ground containers before transferring material. Product can accumulate static charge which may cause a fire or explosion.

Use only with adequate ventilation. Avoid breathing vapour or mist. Inhalation of vapours may cause respiratory irritation, headache, dizziness, nausea, loss of consciousness, and in cases of extreme exposure, possibly death.

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. This product is an eye irritant and, on prolonged or repeated contact, a skin irritant.

This is a low viscosity material - if swallowed, it may be aspirated and can cause serious or fatal lung damage. Do not ingest.

Spilled material will be slippery and may cause falls.

Routes of Exposure

Eyes, skin, inhalation and ingestion.

Potential Acute Health Effects

Eyes Contact

Direct liquid contact with eyes will cause irritation. Vapour and mist may cause eye irritation.

Skin Contact/Absorption

Irritating to skin. Prolonged or repeated contact may cause drying and defatting of the skin resulting in dermatitis.

Inhalation

Inhalation of vapours may cause irritation, headaches, loss of appetite, peripheral neuropathy, insomnia, drowsiness, bone marrow damage. Inhalation of vapours may also affect the Central Nervous System, bone marrow, liver and kidneys.

Ingestion	Ingestion may lead to vomiting and diarrhea. Vomiting may cause aspiration of liquid into the lungs and may result in chemical pneumonia, severe lung damage and respiratory failure.
Medical Conditions Aggravated by Exposure	Neurological and cardiovascular disorders, diseases of the skin, eyes or respiratory tract, preexisting liver and kidney disorders.
<i>See also Toxicological Information (Section 11)</i>	
Additional Remarks	None

SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Name	CAS #	% (wt)
Low boiling point naphtha *	8032-32-4	100
n-hexane	110-54-3	10-30
toluene	108-88-3	1-5
xylene, mixed isomers	1330-20-7	0.1-1.5
ethyl benzene	100-41-4	0.1-1.5
benzene	71-43-2	0.1-1.5

* Product is defined as a low boiling naphtha, a complex combination of aliphatic and aromatic hydrocarbons in the range of C6-C10. The listed components are provided as guidance based on available knowledge of the commingled stream.

SECTION 4. FIRST AID MEASURES

Eye Contact	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. If irritation persists, repeat flushing. Seek immediate medical attention.
Skin Contact	Remove contaminated clothing and launder before reuse. Wash contaminated skin with mild soap and water for at least 15 minutes. If irritation persists, repeat flushing. Seek immediate medical attention.
Inhalation	Remove person to fresh air. If breathing has stopped, trained personnel should begin artificial respiration (AR) immediately. If heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately. Seek immediate medical attention.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of material into lungs. Never give anything by mouth to an unconscious person. Seek immediate medical attention.
Notes to Physician	The main hazard following accidental ingestion is aspiration of the liquid into the lungs producing chemical pneumonitis.
Additional Remarks	None

SECTION 5. FIRE FIGHTING MEASURES

Conditions of Flammability	Flammable liquid. When heated above the flashpoint, readily releases flammable vapours. When mixed with air and exposed to ignition source, vapours can burn in open or explode if confined. Vapours are heavier than air. Vapours can travel along ground and flashback along vapour trail. Product will float, is capable of creating a fire hazard along the path of runoff and can be reignited on the surface of water. Containers exposed to intense heat may rupture.
Extinguishing Media	Use dry chemical, carbon dioxide, foam or water fog. Do not use solid water stream as it may scatter material and spread the fire. Water spray may be used to cool containers exposed to fire conditions.
Protection of Firefighters	As in any fire, wear full fire fighting gear including NIOSH-approved positive pressure self-contained breathing apparatus.
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, and irritating gases including sulfur dioxide may be formed upon combustion. Product burns with a very smoky flame.
Sensitivity to Static Discharge	This product is sensitive to static discharge. Bond and ground all containers before transferring material.
Additional Remarks	None

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Eliminate all ignition sources. Isolate hazard area and restrict access. Try to work upwind of spill. Do not touch or walk through spilled material. Spilled material is slippery. Do not breathe vapor or mist. Provide adequate ventilation. Ventilate closed spaces before entering. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal
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	protective equipment (see section 8). Shut off leak only if it can be done safely.
Environmental Precautions	Prevent substance from entering natural bodies of water and sewer systems. Spilled product may pose a risk to the aquatic ecosystem if released.
Clean Up Methods	Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding all equipment. Monitor area with combustible gas indicator. Use spark-proof tools and explosion-proof equipment. Move containers from spill area. Absorb small spills with an inert material. For large spills, contain with dikes and collect spillage by pumping off or absorb with a non-combustible material (e.g. sand, earth, vermiculite or diatomaceous earth). Place residues in a suitable, covered, properly labeled container for disposal according to local regulations. Contaminated absorbent material and soil may pose the same hazard as the spilled product.
Additional Remarks	Waste must be disposed of in accordance with federal, provincial and local environmental control regulations.

SECTION 7. HANDLING AND STORAGE

Fire Prevention	Handle as a flammable liquid. Keep away from heat, open flames, sparks and other sources of ignition. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. Empty containers may contain flammable product residue. Do not reuse container. Do NOT cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity or other sources of ignition.
Worker Contact	Wear appropriate personal protective equipment. Avoid prolonged or repeated skin contact. Avoid breathing vapours or mists. Use only with adequate ventilation. Maintain good personal hygiene. Do not smoke, eat or drink when handling this product. Wash thoroughly after handling product and before eating, drinking or smoking.
Storage Requirements	Store in a cool, dry, well-ventilated area, away from heat, ignition sources, and incompatible materials. Keep container tightly closed when not in use.
Additional Remarks	None

SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

Exposure Guidelines / Limits	Not established for product.
Exposure Guideline / Limits for Components	
n-hexane	ACGIH TLV: TWA 50 ppm; absorbed through skin contact;
heptane	ACGIH TLV: TWA 400 ppm; STEL 500 ppm ;
octane	ACGIH TLV: TWA 300 ppm;
methylcyclohexane	ACGIH TLV: TWA 400 ppm;
n-nonane	ACGIH TLV: TWA 200 ppm;
toluene	ACGIH TLV: TWA 20 ppm;
xylene, mixed isomers	ACGIH TLV: TWA 100 ppm; STEL 150 ppm
ethyl benzene	ACGIH TLV: TWA 100 ppm; STEL 125 ppm;
benzene	ACGIH TLV: TWA 0.5 ppm; STEL 2.5 ppm ; absorbed through skin contact
Please consult with local authorities for acceptable local exposure limits since values can vary from jurisdiction to jurisdiction.	
Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations below their respective occupational exposure limits. Mechanical ventilation is required for all indoor situations to control fugitive emissions. Electrical and mechanical equipment should be explosion-proof.
Personal Protection	
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 person protective equipment appropriate for these job tasks and conditions.	
Respirator	If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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. A NIOSH-approved air-purifying mask equipped with organic vapor cartridges with P95 prefilters may be appropriate. In poorly ventilated areas or emergency situations use a NIOSH-approved atmosphere-supplying respirator.
Hands	Nitrile or neoprene gloves.
Eyes	Chemical safety goggles and/or face shield if splashing may occur during handling.

Body Wear long sleeves and pants to prevent prolonged or repeated skin contact.
Remove contaminated clothing and launder before reuse.

Feet Steed toed, chemical resistant boots.

Other Eyewash stations and safety showers are near the work location.

Protective Clothing (Pictograms)



Additional Remarks None

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance and Odour	clear & colourless oily with hydrocarbon odour
Odour Threshold	Not available
Specific Gravity	0.72 – 0.75 (varies with source)
Flashpoint	-18 °C (-0.4 F) (method not specified)
Lower Flammable Limit	Not available
Upper Flammable Limit	Not available
Autoignition Temperature	Not available
Vapour Density (air=1)	>1
Vapour Pressure	22.3 kPa Reid Vapour Pressure
Evaporation Rate	0.76 (n-butyl acetate = 1) (ASTM D3539)
Boiling Point	37°C (98.6 F)
Freezing/ Point Point	Not available
pH	Not applicable
Viscosity	Not available
Solubility in Water	Insoluble in water.
Coefficient of Water/Oil	Not available
Additional Remarks	None

SECTION 10. STABILITY AND REACTIVITY DATA

Chemical Stability	Material is stable under normal conditions.
Hazardous Polymerization	Will not occur
Sensitivity to Mechanical Impact	No
Incompatible Material	Strong oxidizing agents.
Conditions of Reactivity	Avoid high temperatures, open flames, sparks, welding, smoking and other ignitions sources.
Hazardous Decomposition Products	Not available
Additional Remarks	None

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity	Not available for product.
Acute Toxicity for Components	
Ligroine	LC50 (inhalation, rat): 3400 ppm/4hr estimate
n-hexane	LD50 (oral, rat): 28,710 mg/kg LC50 (inhalation, rat): 48,000 ppm / 4hr
toluene	LD50 (oral, rat): 5000 mg/kg LC50 (inhalation, rat): 8000 ppm / 4hr
xylene, mixed isomers	LD50 (oral, male rat): >4300 mg/kg LD50 (dermal, rabbit): >1700 mg/kg LC50 (inhalation, rat): 5000 ppm/4hr
ethyl benzene	LD50 (oral, male rat): 3500 mg/kg LD50 (dermal, rabbit): >5000 mg/kg LC50 (inhalation, rat): >4000 ppm/4hr
benzene	LD50 (oral, rat): 3306 mg/kg LC50 (inhalation, rat): 7000 ppm / 7hr
Effects of Acute Exposure	See Hazards Identification (Section 2)
Effects of Chronic Exposure	Prolonged or repeated exposure to the skin can defat the skin and lead to dermatitis. Inhalation may cause headaches, loss of appetite, drowsiness, visual impairment, peripheral neuropathy, insomnia, drowsiness, bone marrow damage and may also affect the Central Nervous System, liver and kidneys.
Irritancy of Product	See Hazards Identification (Section 2)

Skin Sensitization	Not expected
Respiratory Sensitization	Not expected
Carcinogenicity	This product contains benzene. The International Agency for Research on Cancer (IARC) has evaluated benzene and classified it as carcinogenic to humans (Group 1). ACGIH has classified benzene as a confirmed human carcinogen (A1). This product contains ethyl benzene. The International Agency for Research on Cancer (IARC) has evaluated ethyl benzene and classified it as possibly carcinogenic to humans (Group 2B) based on sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. ACGIH has classified ethyl benzene as a confirmed animal carcinogen with unknown relevance to humans (A3).
Reproductive Toxicity	Not available.
Teratogenicity/ Embryotoxicity	Toluene and xylene have produced fetotoxic effects in animals, in the absence of maternal toxicity.
Mutagenicity	Not available
Synergistic Products/Effects	The toxicity of this material is probably increased by exposure to other solvents, alcohols or aromatic hydrocarbons, which inhibit their breakdown by the liver. Xylene reacts synergistically with n-hexane to enhance hearing loss.
Additional Remarks	None

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity	If released into soil, it will absorb and may biodegrade in anaerobic conditions. Photo-oxidation products include phenol, nitrophenols, nitrobenzene, formic acid and peroxyacetyl nitrate. Runoff from fire control or dilution water may cause pollution. Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds, or rivers.
Degradability	Not available
Bioaccumulation	Not available
Mobility	Not available
Additional Remarks	None

SECTION 13. DISPOSAL CONSIDERATIONS

Processing, use, dilution or contamination of this product may cause its physical and chemical properties to change. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal. Dispose in accordance with federal, provincial and local regulations.

Dispose of all packaging in accordance with local regulations. Empty containers may contain residue and should be completely drained and safely stored until appropriately reconditioned or disposed. **DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.**

Additional Remarks None

SECTION 14. TRANSPORT INFORMATION

TDG Classification

PETROLEUM DISTILLATES, N.O.S., Class 3, UN1268, PG II



Marine Pollutant	Not available
Additional Transport Information	None
Emergency Response Guide	128

SECTION 15. REGULATORY INFORMATION

Canadian Regulations

WHMIS This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR.

DSL Inventory 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.

Additional Remarks	None
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SECTION 16. OTHER INFORMATION	
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Revisions	July 7, 2011: Changes to Section 3 Composition, Section 8, Section 11. March 24, 2011: Format changes. Formulation has been changed. Information has been revised throughout. Changes to WHMIS and transport classifications.
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Prepared by	Trican Well Service Corporate Health, Safety & Environment Department (403) 723-3688
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END OF MATERIAL SAFETY DATA SHEET