

## SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	<b>WBO-2</b>	<b>Code</b>	1148
<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 MST, Monday – Friday)	<b>Revision Date</b>	October 26, 2010
<b>Product Uses</b>	Breaker for Water-based Fluid Systems	<b>Supersedes Date</b>	September 7, 2007
<b>24 Hour Emergency Numbers</b>	CANUTEC 613-996-6666 (Canada 24 hours)	<b>Original Creation</b>	August 8, 2005

## SECTION 2. HAZARDS IDENTIFICATION

<b>WHMIS (Pictograms)</b>	<b>Workplace Hazardous Material Information System Classification</b>
 	<b>C</b> Oxidizing Material <b>D2A</b> Very Toxic material causing other toxic effects <b>D2B</b> Toxic materials causing other toxic effects
<b>Hazard Summary</b>	<b>DANGER! OXIDIZER. SENSITIZER.</b>  Contact with combustible materials may cause fire. Decomposes under conditions of moisture (water/water vapour) and/or excessive heat evolving large volumes of gas and/or vapor, creating significant and hazardous pressures.  May cause allergic skin (dermatitis) or respiratory (asthma) reaction.
<b>Routes of Exposure</b>	Eyes, skin, inhalation and ingestion.
<b>Potential Acute Health Effects</b>	
<b>Eyes Contact</b>	May cause eye irritation.
<b>Skin Contact/Absorption</b>	May cause skin irritation.
<b>Inhalation</b>	Airborne dust may be irritating to eyes, nose, lungs, throat and skin upon contact. Exposure to high levels of dust may cause difficulty in breathing in sensitive persons.
<b>Ingestion</b>	Low toxicity.
<b>Medical Conditions Aggravated by Exposure</b>	Not available
<i>See also Toxicological Information (Section 11)</i>	
<b>Additional Remarks</b>	None

## SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Name	CAS #	% (wt)
Sodium persulfate	7775-27-1	60-100

## SECTION 4. FIRST AID MEASURES

<b>Eye Contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Seek medical attention immediately after flushing.
<b>Skin Contact</b>	Wash thoroughly with soap and water. Flush with plenty of water. Seek medical attention if irritation persists.
<b>Inhalation</b>	Remove person to fresh air. If not breathing, provide artificial respiration. If breathing is difficult or symptoms develop, seek prompt medical attention.
<b>Ingestion</b>	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 medical attention immediately.
<b>Notes to Physician</b>	Provide symptomatic/supportive care as necessary. Gastric lavage or emesis induction for ingestion must consider the possible aggravation of esophageal

	injury and the expected absence of system effects.
<b>Additional Remarks</b>	None

### SECTION 5. FIRE FIGHTING MEASURES

<b>Conditions of Flammability</b>	Not flammable, but this substance is a strong oxidizer and heat of its reaction with reducing agents or combustibles may cause ignition. Heat or contact with water releases oxygen which may intensify combustion of an existing fire. Decomposes in storage under conditions of moisture (water/water vapour) and/or excessive heat causing release of oxides of sulfur, nitrogen and oxygen that supports combustion. Presence of water accelerates decomposition.
<b>Extinguishing Media</b>	Flooding amounts of water. Do not use carbon dioxide or other gas filled fire extinguishers; they will have no effect on decomposing persulfates.
<b>Protection of Firefighters</b>	As in any fire, wear full fire fighting gear including NIOSH-approved positive pressure self-contained breathing apparatus.
<b>Hazardous Combustion Products</b>	Oxides of sulfur. Oxides of nitrogen.
<b>Sensitivity to Mechanical Impact</b>	Not expected
<b>Sensitivity to Static Discharge</b>	Not expected
<b>Additional Remarks</b>	None

### SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Isolate hazard area and restrict access. Try to work upwind of spill. Do not touch or walk through spilled material. Avoid contact with eyes, skin or clothing. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8). Shut off leak if it can be done safely.
<b>Environmental Precautions</b>	Prevent substance from entering natural bodies of water and sewer systems. Spilled product may pose a risk to the aquatic ecosystem if released.
<b>Clean Up Methods</b>	Pick up solids and put in an appropriate sealed container for later disposal. Isolated material should be monitored for signs of decomposition (fuming/smoking). If spilled material is wet, dissolve with large quantity of water and dispose of according to local and regional authority requirements.
<b>Additional Remarks</b>	Waste must be disposed of in accordance with federal, provincial and local environmental control regulations.

### SECTION 7. HANDLING AND STORAGE

<b>Worker Contact</b>	Use clean plastic or stainless steel scoops only. Keep the containers closed when not in use. Wear appropriate personal protective equipment. Avoid prolonged or repeated contact with skin. Avoid breathing in dust. 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.
<b>Storage Requirements</b>	Store in a cool, dry, well-ventilated area, away from heat, ignition sources and incompatible materials. Keep container tightly closed when not in use. Use first in, first out storage system.
<b>Additional Remarks</b>	None

### SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

<b>Exposure Guidelines / Limits</b>	ACGIH TLV: TWA 0.1 mg/m3 (Persulfates, as persulfate)
Please consult with local authorities for acceptable provincial exposure limits since values can vary from jurisdiction to jurisdiction.	
<b>Engineering Controls</b>	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations below their respective occupational exposure limits. Prevent dust release into work environment.
<b>Personal Protection</b>	
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.	
<b>Respirator</b>	Use a NIOSH approved dust mask with N95 filters. In poorly ventilated areas or emergency situations use a NIOSH-approved atmosphere-supplying respirator.
<b>Hands</b>	Natural rubber, nitrile or neoprene gloves.
<b>Eyes</b>	Chemical safety goggles, also use a face shield if splashing may occur.

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

**Feet** Rubber or neoprene work boots.

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

**Protective Clothing (Pictograms)**



**Additional Remarks** None

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Solid
<b>Odour and Appearance</b>	Odourless; white crystals
<b>Odour Threshold</b>	Not applicable
<b>Specific Gravity</b>	2.6
<b>Flashpoint</b>	None
<b>Upper Flammable Limit</b>	Not available
<b>Lower Flammable Limit</b>	Not available
<b>Autoignition Temperature</b>	Not available
<b>Vapour Density (air=1)</b>	Not available
<b>Vapour Pressure</b>	Not available
<b>Evaporation Rate</b>	Not available
<b>Boiling Point</b>	Not available
<b>Freezing / Melting Point</b>	Decomposes at 180 °C
<b>pH</b>	5.0-7.0 (1% solution)
<b>Viscosity</b>	Not available
<b>Solubility in Water</b>	Appreciable (>10%)
<b>Coefficient of Water/Oil</b>	Not available
<b>Additional Remarks</b>	None

**SECTION 10. STABILITY AND REACTIVITY DATA**

<b>Chemical Stability</b>	Stable under normal storage conditions.
<b>Conditions of Instability</b>	Becomes unstable in presence of heat, moisture and contamination.
<b>Incompatible Material</b>	Acids. Alkalis. Halides( fluorides, chlorides, bromides). Combustible material. Heavy metals. Oxidizing materials. Reducing agents. Organic compounds.
<b>Conditions of Reactivity</b>	None specified
<b>Hazardous Decomposition Products</b>	Decomposes in storage under conditions of moisture (water/water vapour) and/or excessive heat causing release of oxides of sulfur, nitrogen and oxygen that supports combustion. Decomposition could form a high temperature melt.
<b>Hazardous Polymerization</b>	Will not occur
<b>Additional Remarks</b>	Use of persulfates in chemical reactions requires appropriate precautions and design considerations for pressure and thermal relief. Decomposing persulfates will evolve large volumes of gas and/or vapor, can accelerate exponentially with heat generation, and create significant and hazardous pressures if contained and not properly controlled or mitigated. Use with alcohols in the presence of water has been demonstrated to generate conditions that require rigorous adherence to process safety methods and standards to prevent escalation to an uncontrolled reaction.

**SECTION 11. TOXICOLOGICAL INFORMATION**

<b>Acute Toxicity</b>	Not available
<b>Effects of Acute Exposure</b>	See Hazards Identification (Section 2)
<b>Effects of Chronic Exposure</b>	Not available
<b>Irritancy of Product</b>	See Hazards Identification (Section 2)
<b>Skin Sensitization</b>	Sensitive persons may develop dermatitis.
<b>Respiratory Sensitization</b>	Sensitive persons may develop asthma.
<b>Carcinogenicity</b>	No components listed as carcinogenic by ACGIH, IARC, OSHA or NTP.
<b>Reproductive Toxicity</b>	Not expected
<b>Teratogenicity</b>	Not expected
<b>Embryotoxicity</b>	Not expected
<b>Mutagenicity</b>	Not expected

<b>Synergistic Products/Effects</b>	None expected
<b>Additional Remarks</b>	None

<b>SECTION 12. ECOLOGICAL INFORMATION</b>	
<b>Aquatic Toxicity</b>	<b>Freshwater Fish:</b> LC50 96 h (Lepomis macrochirus) 771 mg/L static LC50 96 h (Oncorhynchus mykiss) 771 mg/L static
<b>Degradability</b>	Not available
<b>Bioaccumulation</b>	Not available
<b>Mobility</b>	Not available
<b>Additional 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.

<b>SECTION 13. DISPOSAL CONSIDERATIONS</b>	
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.	
<b>Additional Remarks</b>	Empty containers should be recycled or disposed of through an approved waste management facility.

<b>SECTION 14. TRANSPORT INFORMATION</b>		
<b>TDG Classification</b>	SODIUM PERSULFATE, Class 5.1, UN1505, PG III	
<b>Marine Pollutant</b>	No	
<b>Additional Transport Information</b>	Not available	
<b>Emergency Response Guide</b>	Guide 140	

<b>SECTION 15. REGULATORY INFORMATION</b>	
<b>Canadian Regulations</b>	
<b>WHMIS</b>	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.
<b>DSL Inventory</b>	All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.
<b>TSCA Inventory Status</b>	All components are included or are exempted from listing on the US Toxic Substances Control Act Inventory.
<b>Additional Remarks</b>	None

<b>SECTION 16. OTHER INFORMATION</b>	
<b>NFPA Rating</b>	Health: 1 Flammability: 0 Instability: 1 Special: Oxidizer
<b>HMIS Rating</b>	Health: 1 Flammability: 0 Reactivity: 1 Other: none <i>0=Insignificant 1 = Slight 2= Moderate 3= High 4 = Extreme</i>
<b>Revisions</b>	Reviewed and updated.
<b>Prepared by</b>	Trican Well Service Corporate Health, Safety & Environment Department (403) 723-3688
<b>Trican Well Service Ltd. Disclaimer</b>	<i>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.</i>

END OF MATERIAL SAFETY DATA