ARLOX HSO600

SECTION 1. IDENTIFICATION

Product Identifier	ARLOX HSO600
Product Family	Hydrogen Sulfide Scavenger
Recommended Use	Drilling Fluid Additive.
Supplier Identifier	Bri-Chem Supply Ltd., Bay 4, 5510 - 3rd Street SE, Calgary, Alberta, T2H 1J9, Bri-Chem Supply, 403-252-5904, www.brichemsupply.com
Emergency Phone No.	ChemTrec, (800) 424-9300, 24/7

SECTION 2. HAZARD IDENTIFICATION

Classification

Flammable liquid - Category 3; Acute toxicity (Oral) - Category 2; Acute toxicity (Dermal) - Category 4; Acute toxicity (Inhalation) - Category 3; Skin corrosion - Category 1C; Carcinogenicity - Category 2; Specific target organ toxicity (repeated exposure) - Category 2

Label Elements

Signal Word:
Danger
Hazard Statement(s):
Flammable liquid and vapour.
Fatal if swallowed.
Toxic if inhaled.
Causes severe skin burns and eye damage.
Suspected of causing cancer.
May cause damage to organs through prolonged or repeated exposure.
Precautionary Statement(s):
Prevention:
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical, ventilating, and lighting equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Do not breathe dusts or mists.
Wash hands and skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Response:
IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTRE or doctor.
Wash contaminated clothing before reuse.
In case of fire: Use to extinguish.
Storage:
Store in a well-ventilated place. Keep cool.
Store locked up.
Disposal:
Dispose of contents and container in accordance with local, regional, national and international regulations.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers
Amine compound	20280-10-8	60-100	
Light aromatic solvent naphtha	64742-95-6	10-30	
1,2,4-Trimethylbenzene	95-63-6	5-10	
1,2,3-Trimethylbenzene	526-73-8	1-5	
1,3,5-Trimethylbenzene	108-67-8	1-5	
Xylene (mixed isomers)	1330-20-7	1-5	
Ethylbenzene	100-41-4	0.1-1	
Cumene	98-82-8	0.1-1	

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, administer artificial respiration and seek medical attention. Get medical attention if symptoms appear.

Skin Contact

Remove and launder contaminated clothing and footwear. Wash contaminated skin with soap and water for at least 15 minutes or until no evidence of material remains. If skin irritation occurs, get medical advice or attention.

Eye Contact

Immediately flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Ingestion

DO NOT INDUCE VOMITING unless directed to do so by medical personnel. Never give anything by mouth to an unconscious or convulsing victim. Seek medical attention if symptoms appear.

Immediate Medical Attention and Special Treatment

Target Organs

Blood system, kidneys, nervous system, liver, respiratory system, skin/epithelium, eyes.

Medical Conditions Aggravated by Exposure

Exposure to this product may aggravate medical conditions involving the following: blood system, kidneys, nervous system, liver, respiratory tract, skin/epithelium, eyes.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use foam, dry chemicals or carbon dioxide extinguishers.

Specific Hazards Arising from the Product

Combustible liquid. Conditions of Flammability: Open flames, sparks, static, heat. Flash Point: 52.2°C (SFCC)
Flammable vapours may form an ignitable mixture with air. Vapours may travel considerable distances and flash back if ignited. Static charges can cause ignition or explosion when container is not bonded.
Hazardous Combustion Products: Oxides of carbon (CO, CO2) and nitrogen (NO, NO2).

Special Protective Equipment and Precautions for Fire-fighters

Evacuate area and fight fire from a safe distance. Use water spray from a safe distance to cool fire-exposed containers. Keep water run-off out of sewers and public waterways.
Firefighters should wear a full-body encapsulating chemical protective suit with positive-pressure self-contained breathing apparatus (SCBA).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Use the personal protective equipment recommended in Section 8 of this safety data sheet.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Use appropriate personal protective equipment. Remove personnel and keep 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.
Small spill: add absorbent material (soil may be used in the absence of other suitable materials), scoop up and place in a sealed, liquid-proof container.
Large spill: dike and use non-sparking or explosion-proof means to transfer material to an appropriate container for disposal.

Other Information

Flammable vapours may form an ignitable mixture with air. Vapours may travel a considerable distance from the spill and flash back if ignited.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Wear appropriate personal protective equipment and avoid contact with skin, eyes and clothing. Avoid inhalation of the vapours/spray. Use only with adequate ventilation. To avoid fire or explosion, ground container equipment and personnel before handling product.
It is good practice to: avoid breathing product; avoid skin and eye contact and wash hands after handling.

Conditions for Safe Storage

Store in a cool, dry, well-ventilated area away from incompatible materials. Keep away from heat, sparks and flame. Keep containers tightly closed and dry.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

(Xylene (mixed isomers))
ACGIH® = American Conference of Governmental Industrial Hygienists. TWA = Time-Weighted Average. 434 mg/m³ 8hour/hours 100 ppm 8hour/hours
ACGIH® = American Conference of Governmental Industrial Hygienists. STEL = Short-term Exposure Limit. 651 mg/m³ 15 minutes 150 ppm 15 minutes
OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. TWA = Time-Weighted Average. 435 mg/m³ 8hour/hours 100 ppm 8hour/hours
OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. STEL = Short-term Exposure Limit. 655 mg/m³ 15 minutes 150 ppm 15 minutes
(Ethylbenzene)
ACGIH® = American Conference of Governmental Industrial Hygienists. TWA = Time-Weighted Average. 434 mg/m³ 8hour/hours 100 ppm 8hour/hours
ACGIH® = American Conference of Governmental Industrial Hygienists. STEL = Short-term Exposure Limit. 543 mg/m³ 15 minutes 125 ppm 15 minutes
OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. TWA =

Time-Weighted Average. 435 mg/m³ 8hour/hours 100 ppm 8hour/hours
OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. STEL = Short-term Exposure Limit. 545 mg/m³ 15 minutes 125 ppm 15 minutes
NOTE: While trimethylbenzene isomers do not have exposure limits, triethylbenzene (mixed isomers) (CAS# 25551-13-7) has a TWA value of 25 ppm for both ACGIH and OSHA (revoked limit). Please consult with local authorities for acceptable provincial exposure limits since values can vary from jurisdiction to jurisdiction.
The OSHA permissible exposure levels shown above are the OSHA 1989 levels or from subsequent OSHA regulatory actions. Although the 1989 levels have been vacated by the US 11th Circuit Court of Appeals, the manufacturer recommends that these lower levels be observed as reasonable worker protection.

Appropriate Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentration of vapours below the respective threshold limit value. Ensure that eyewash stations and safety showers are near the workstation location.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles.

Skin Protection

Wear long-sleeved shirt, chemically-resistant gloves (nitrile, neoprene, rubber), chemically-resistant boots and/or overshoes to prevent repeated or prolonged skin contact.

Respiratory Protection

Respirator use is not expected to be necessary under normal conditions of use. In poorly ventilated areas, emergency situations or if high exposure levels are exceeded, use a NIOSH-approved full-face respirator.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Amber liquid. Particle Size: Not available
Odour	Aromatic
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	-40 ºC (melting); Not available (freezing)
Initial Boiling Point/Range	Not available
Flash Point	52.2 ºC (closed cup)
Evaporation Rate	Not available
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	9.98 mm Hg
Vapour Density (air = 1)	> 1
Relative Density (water = 1)	0.818 - 0.830
Solubility	Dispersible in water; Not available (in other liquids)
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available (kinematic)

Other Information

Physical State	Liquid
Molecular Formula	Not available
Molecular Weight	Not available
Bulk Density	Not available
Surface Tension	Not available
Critical Temperature	Not available

Vapour Pressure at 50 deg C Not available
Saturated Vapour Concentration Not available

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

Hazardous polymerization is not expected to occur.

Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources.

Incompatible Materials

Oxidizing materials.

Hazardous Decomposition Products

Not applicable.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Skin contact; eye contact; inhalation.

Acute Toxicity

(1,2,4-Trimethylbenzene)
LC50 Acute Vapour Rat: 18,000 mg/m^3 4hours/hour
(1,3,5-Trimethylbenzene)
LC50 Acute Vapour Rat: 24,000 mg/m^3 4hours/hour
(Xylene (mixed isomers))
LC50 Acute Vapour Rat: 5,000 ppm 4hours/hour
(Light aromatic solvent naphtha)
LD50 Acute Oral Rat: 2900 mg/kg
LD50 Oral Rat: 8400 mg/kg
(1,2,4-Trimethylbenzene)
LD50 Acute Oral Rat: 5,000 mg/kg
(Xylene (mixed isomers))
LD50 Acute Oral Rat: 4300 mg/kg
LD50 Oral Male Rat: 3523 mg/kg
(Ethylbenzene)
LD50 Acute Oral Rat: 3500 mg/kg
(Xylene (mixed isomers))
LD50 Acute Dermal Rabbit: > 1700 mg/kg
(Ethylbenzene)
LD50 Acute Dermal Rabbit: 15,400 mg/kg

Skin Corrosion/Irritation

May be irritating to the skin. Skin sensitizer. May cause allergic skin reactions with repeated exposure.

Serious Eye Damage/Irritation

Particles may cause mechanical irritation.
May cause eye irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

May cause central nervous system effects if inhaled. May be irritating to the lungs.

Ingestion

Not considered a likely route of exposure, however, may be harmful or cause irritation if swallowed.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

This product contains components that can cause various concerns targeting the blood system, kidneys, nervous system, liver, respiratory tract, skin/epithelium, eyes.
Repeated or prolonged contact may cause dermatitis (inflammation) and defatting of the skin (dryness). See Toxicological Information (Section 11).
Light aromatic solvent naphtha may cause damage to the peripheral nerves, resulting in numbness or tingling of the extremities with chronic long-term exposure to high concentrations. Ingestion has produced CNS effects in laboratory animals.
Effects of chronic inhalation of xylene reportedly was associated with headache, tremors, apprehension, memory loss, weakness, dizziness, loss of appetite, nausea, ringing in the ears, irritability, thirst, anemia, mucosal bleeding, enlarged liver and hyperplasia but not destruction of the bone marrow. Effects on the blood have been reported from chronic exposure to as little as 50 mg/m³. Repeated exposure can damage bone marrow, causing low blood cell count and damage to the liver and kidneys. Chronic xylene exposure (usually mixed with other solvents) has produced irreversible damage to the central nervous system (CNS). Xylene may damage hearing or enhance sensitivity to noise in chronic occupational exposures. Tolerance to xylene can occur over the work week and disappear over the weekend. Rats exposed for 4 months to 1700 ppm of a solvent similar to this product showed evidence of mild damage to the liver, lungs, and kidneys. These effects were not seen in rats exposed to one year to 350 ppm of another similar solvent.
Chronic 1,2,4-Trimethylbenzene (also known as pseudocumene) exposure may provoke bronchospasm with cough and wheezing. Blood effects such as anemia and delayed clotting time have been noticed in workers chronically exposed to a solvent containing trimethylbenzene. The blood effects, however, may have been due to a contaminant in the solvent such as benzene (a known blood toxin).
1,3,5-Trimethylbenzene (Mesitylene) exposure may produce asthmatic-like bronchitis as a delayed hazard. Nervousness, tension and anxiety have been noted in chronically-exposed workers with exposure to a mixture of solvents including mesitylene. Elevated alkaline phosphates and SOGT (liver enzymes) levels have been noted in chronic animal inhalation studies but have not been reported in exposed humans. Thrombocytopenia (a lack of platelets in the blood) with bleeding from the gums and nose and mild anemia may occur with chronic exposure to mesitylene as a component of the commercial solvent mixture. These hematological disorders may have been due to a contaminant, such as benzene. Thrombocytosis (an increase of platelets in the blood) and thrombocytopenia have been noted in rabbits.
Prolonged exposure to ethylbenzene may result in CNS, upper respiratory tract, blood and liver disorders. Chronic exposures higher than 100 ppm produced fatigue, headache, drowsiness and mild eye and respiratory irritation. Benzene and othe alkaylbenzene compounds can suppress the bone marrow but no original studies were found showing this effect with ethylbenzene. Slight liver and kidney changes occurred in rats exposed to 600 ppm for up to 16 weeks. The level of exposure, not the duration, affected the metabolism of ethylbenzene in rats.

Respiratory and/or Skin Sensitization

This product may cause skin sensitization (allergic reaction). Xylene has tested positive as a dermal sensitizer. With exposure to 1,2,4-Trimethylbenzene, respiratory distress was noted in experimental animals following sub acute inhalation exposure. Nervousness and anxiety were noted with chronic occupational exposure.

Carcinogenicity

Ethylbenzene is classified by the IARC as a Group 2B carcinogen (possibly carcinogenic to humans). This classification was based on sufficient evidence in animals but inadequate evidence for cancer in exposed humans. The NTP concluded there is clear evidence to support carcingenicity of ethylbenzene in male rats and some evidence in female rats and male and female mice. These observations were based on 2-year inhalation studies in which the test animals were exposed to 250 and 750 ppm. The OSHA and ACGIH 8-hour TWA exposure for ethylbenzene is 100 ppm. In two studies of workers potentially exposed to ethylbenzene, no cancer evidence or mortality was observed.

Reproductive Toxicity

Development of Offspring

(Light aromatic solvent naphtha) In a mouse developmental effects study, reduced fetal body weight was seen but no teratoxicity. Rats exposed to vapours of a similar solvent during pregnancy showed embryo/ferotoxicity at concentrations producing maternal toxicity.
(Xylene (mixed isomers)) Inhalation exposure has produced feortoxicity and post-natal development toxicity in laboratory animals.

Sexual Function and Fertility

(Light aromatic solvent naphtha) A rat reproductive effects study demonstrated toxicity but little effect on reproductive parameters.
(1,2,4-Trimethylbenzene) At the time of this review, no studies were found on the potential adverse reproductive effects of pseudocumene in humans but trimethylebenzenes (incuding pseudocumene) can cross the placental

barrier. In an experimental animal study, offspring born to pregnant rats exposed to pseudocumene were healthy at birth and grew normally.
Ethylbenzene caused retarded skeletal development, extra ribs, tail misplacement and decreased weight gain in fetal rats exposed to a high dose of 2,400 mg/kg which was also toxic to the mothers. However, mush lower doses of less than 100 ppm produced skeletal abnormalities, affected female fertility, were ferotoxic and caused smaller litter sizes in rats. It has been detected in nhuman umbilical cord (fetal) blood and would thus be available to the fetus.

Germ Cell Mutagenicity

(Light aromatic solvent naphtha) Mutagenicity studies and a rat inhalation neurotoxicity were negative.
1,3,5-Tremethylbenzene has been positive in a mutagenicity assay.
Ethylbenzene was weakly positive for inducing sister chromatid exchanges in human white blood cells in culture and produced mutations in mouse lymphocytes.

Interactive Effects

Inhalation of hexane has synergistically enhanced the hearing loss caused by inhalation exposure to xylene in laboratory animals.

SECTION 12. ECOLOGICAL INFORMATION

Special Remarks:: An EcoTox Report and/or the material's environmental fate is available upon request at the following number:: 1-800-235-4249, hten press 4.

Ecotoxicity

(Arlox HSO600)
LC50 Flathead minnow 96 hour/hours: 13 mg/L
LC50 Rainbow Trout 96 hour/hours: 47 mg/L
LC50 Sheepshead minnow 96 hour/hours: 70 mg/L
EC50 Skeletonema costatum 96 hour/hours: 8.9 mg/L

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of in accordance with federal, provincial and local government regulations. Note that these regulations may aslo 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

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	2920	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Contains: Amine compound, Light aromatic naphtha)	8	III

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

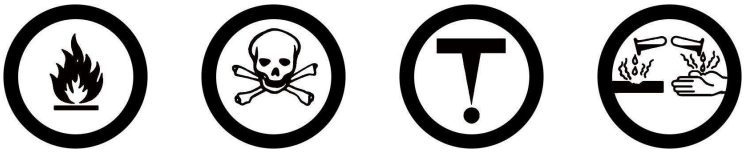
Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

WHMIS 1988 Classification



Class B3 Class D1B Class D2A Class E

B3 - Combustible Liquid; D1B - Toxic; D2A - Very Toxic (Chronic toxicity); E - Corrosive

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by the Controlled Products Regulations.

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All components are compliant with or are exempted from listing on the Domestic Substance List (DSL).

SECTION 16. OTHER INFORMATION

NFPA Rating	**Health - 3 Flammability - 2 Instability - 0**
SDS Prepared By	Bri-Chem Supply Ltd
Phone No.	(403) 252-5904
Date of Preparation	November 11, 2015
Date of Last Revision	July 20, 2016
Disclaimer	This Health and Safety information is correct to the best of our knowledge and belief at the date of its publication, but we cannot accept liability for any loss, injury or damage which may result from its use. We shall ensure, so far as is reasonably practicable, that any revision of this Data Sheet is sent to all customers to whom we have directly supplied this substance, but must point out that it is the responsibility of any intermediate supplier to ensure that such revision is passed to the ultimate user. The information given in the Data Sheet is designed only as guidance for safe handling, storage, and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent personnel, within a controlled environment. Should further information be required, this can be obtained through the sales office whose address is at the top of this data sheet.