

## MATERIAL SAFETY DATA SHEET

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Version 2.0

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**1. PRODUCT AND COMPANY INFORMATION**

Product Name:	EKOFIX Solution
Company:	Ausgen Development Ltd.
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**2. COMPOSITION / INFORMATION ON INGREDIENTS**

Component	CAS Number	Percent	Classification/ Risk Phase
Isopropyl Alcohol	67-63-0	35-45	F;R11
White Oil	8042-47-5	15-25	
Isobutanol	78-83-1	3.5-4.5	F;R11
Benzaldehyde	100-52-7	0.4-0.8	

**3. HAZARD IDENTIFICATION**

NFPA Ratings (Scale 0-4)		
Health	Fire	Reactivity
2	2	0
HMIS Ratings (Scale 0-4)		
Health	Fire	Reactivity
2	2	0

**Eye contact:** Eye: Causes serious eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.

**Skin contact:** Causes moderate skin irritation. May cause cyanosis of the extremities.

**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

**Inhalation:** Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation.

**Chronic:** May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart damage.

**Danger Explosion:** Flammable.

**4. FIRST-AID MEASURES**

**Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If eye irritation persists, get medical aid immediately.

**Skin:** Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid. Wash clothing and shoes thoroughly before reuse

**Ingestion:** Wash out mouth with water. Material is not expected to be absorbed from the gastrointestinal tract. Never give anything by mouth to an unconscious person. If swallowed, vomiting may occur spontaneously. Do not induce vomiting. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Consult a physician.

**Inhalation:** If overcome by dust or vapours, remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. If symptoms persist, call a physician.

**5. FIRE-FIGHTING MEASURES**

**FIRE AND EXPLOSION HAZARDS:** Vapor-air mixtures are explosive within flammable limits above the flash point. Contact with strong oxidizers may cause fire. Product may accumulate a static charge which could result in an electrical discharge that could ignite polymer dust. Sealed containers may rupture when heated.

**EXTINGUISHING MEDIA:** For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

**FIRE FIGHTING:** Move container from fire area if it can be done without risk. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

**FLASH POINT:** 25°C

**REACTIVITY:** N/A

**HAZARDOUS COMBUSTION PRODUCTS:**

Thermal decomposition products or combustion: carbon monoxide and carbon dioxide.

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Vapors can flow along surfaces to distant ignition source and flash back.

**6. ACCIDENTAL RELEASE MEASURES**

**PROCEDURE(S) OF PERSONAL PRECAUTION(S):** Wear protective equipment. Remove all sources or ignition and isolate hazard area. Collect and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (eg. Vermiculite, dry sand and earth), and place in a chemical waste container. Do not use combustible materials such as saw dust. Do not flush to sewer. If a leak or spill has not been ignited, use water spray to disperse the vapors, to protect personnel attempting to stop the leak, and to flush spills away from exposures.

**METHODS OF CLEANING UP SMALL AMOUNT OF LIQUID LEAKED:** Collect the leaked liquid in a container. Use active carbon, non-flammable absorbent to absorb the residues. Use emulsion made of non-inflammable dispersing agent to wash, collect the diluted liquid and dispose to waste water system.

**METHODS OF CLEANING UP LARGE AMOUNT OF LIQUID LEAKED:** Wear Self-contained breathing apparatus and protective clothing. Build dike or ditch to collect the leakage. Use form to cover the leaks to reduce the damage of fume and use water mist to cool and dilute the fume and protect rescuer. Use explosion proof pumps to move the leakage to collecting container, recycle or dispose for waste treatment.

## 7. HANDLING AND STORAGE

**HANDLING:** Protect against physical damage. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty as they may retain product residues (eg vapors and liquid), observe all warnings and precautions listed for the product. Do not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose these containers to heat, sparks, flame, static electricity or other sources of ignition. They may explode and cause injury or death.

**STORAGE:** Keep away from heat and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Outside or detached storage is preferred. Containers should be bonded and grounded for transfers to avoid sparks. Storage and use areas should be No Smoking Areas.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Processing in closed area with adequate ventilation. Equip with safety shower and sink for washing eyes.

### PERSONAL PROTECTIVE EQUIPMENT

**EYES:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Maintain eye wash fountain and quick-drench facilities in work area.

**SKIN:** Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate to prevent skin contact. Wear rubber impervious protective gloves to protect hands.

**CLOTHING:** Wear appropriate protective clothing to prevent skin exposure.

**RESPIRATORS:** If engineering controls do not maintain airborne concentrations to an acceptable level, an approved respirator must be worn. A half-face organic vapor respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece organic vapor respirator may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece positive-pressure, air supplied respirator should be used for emergencies or instances where the exposure levels are not known.

**HYGIENE MEASURES:** Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. When using, do not eat, drink or smoke. Keep working clothes separately. Shower and change after operation. Regular body check during and before handling the substances.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** Liquid

**COLOR:** Apple Green

**PHYSICAL FORM:** Liquid

**ODOR:** Alcohol-like.

**BOILING POINT:** 85°C

**MELTING POINT:** -93°C

**FLASH POINT:** 25°C

**VAPOR PRESSURE:** 4.4kPa (room temperature)

**RELATIVE DENSITY:** 0.84

**SPECIFIC GRAVITY (water=1):** 0.82 - 0.86

**WATER SOLUBILITY:** Completely soluble in water

**pH:** 8.0 - 8.5

**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not available

**10. STABILITY AND REACTIVITY**

**Chemical Stability:** Stable under normal temperatures and pressures.

**Conditions to Avoid:** Ignition sources, excess heat and flame and incompatibles.

**Incompatibilities with Other Materials:** Chemical reactions that could result in a hazardous situation (e.g. generation of flammable or toxic chemicals, fire or detonation) are listed here. Many of these reactions can be done safely if specific control measures (e.g. cooling of the reaction) are in place. Although not intended to be complete, an overview of important reactions involving common chemicals is provided to assist in the development of safe work practices.

STRONG OXIDIZING AGENTS (e.g. perchloric acid, nitric acid or chlorine)

STRONG ACIDS

**Hazardous Decomposition Products:** The combustion and decomposition products are very hazardous because they are flammable, toxic and in some cases dangerously reactive. The main products of combustion in a fire are carbon monoxide, carbon dioxide and nitrogen dioxide. But hazardous polymerization will not occur.

**Hazardous Polymerization:** Hazardous polymerization does not occur.

**11. TOXICOLOGICAL INFORMATION**

**IPA CAS# 67-63-0:**

**Carcinogenicity:** ACGIH: A4 - Not Classifiable as a Human Carcinogen CAS# 7732-18-5: Not listed by ACGIH. IARC, NIOSH, NTP, or OSHA.

**Epidemiology:** Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the "fetal alcohol syndrome."

**Teratogenicity:** Oral, Human - woman: TDLo = 41 gm/kg (female 41 week(s) after conception) Effects on Newborn - Apgar score (human only) and Effects on Newborn - other neonatal measures or effects and Effects on Newborn - drug dependence.

**Reproductive Effects:** Intrauterine, Human - woman: TDLo = 200mg/kg (female 5 day(s) pre-mating) Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; #females pregnant per # females mated).

**Neurotoxicity:** No information available.

**LD/LC50:**

INH-MUS LC50 39 gm/m<sup>3</sup>/4H

INH-RAT LC50 20000 ppm/10H 200 mg m<sup>-3</sup>

ORL-MUS LD50 3450 mg/kg

ORL-RAT LD50 9000 mg/kg

**12. ECOLOGICAL INFORMATION**

This material may evaporate and biodegrade to a moderate extent and is expected to leach into groundwater when released into soil. This material may evaporate and biodegrade to a moderate extent when released into water. This material may be moderately degrade by reaction with photochemically produced hydroxyl radicals and is expected to have a half-life of less than 1 day when released into air. This material is not expected to bioaccumulate significantly.

**Ecotoxicity:**

96 hours LC50 Rainbow trout 12900-15300 mg/L

24 hours Flow-through LC50 Rainbow trout 11200 mg/L;

**Microtox test:** When spilled on land it is apt to volatilize, biodegrade, and leach into the ground water, but no data on the rates of these processes could be found. Its fate in ground water is unknown. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.

**Environmental:** When released to the atmosphere it will photodegrade in hours (polluted urban atmosphere) to an estimated range of 4 to 6 days in less polluted areas. Rainout should be significant.

**Physical:** No information available.

**Other:** No information available.

**13. DISPOSAL CONSIDERATIONS**

Waste material is a hazardous waste and should not be released into the environment and not allow to escape into drains or water sources or soil. Dispose of in accordance with applicable local regulations. Use controlled incineration.

**14. TRANSPORT INFORMATION**

UN Number : UN1219  
Class : 3  
Packaging group : II  
Marine pollutant : no  
IATA Class : 3

**15. REGULATORY INFORMATION****Federal:**

DOT: Not hazardous

OSHA: This product is not hazardous under the criteria of Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

SARA: No ingredients listed

TSCA: This product is certified for inclusion on the TSCA Inventory of Chemical Substances.

**State:**

CA: Proposition 65: This product does not contain chemicals known to the State of California to cause cancer or reproductive toxicity.

**Labelling according to EEC Directives:.**

The above ingredients are not classified in the Annex I of Directive 67/548/EEC and are not listed in a priority list (as foreseen under Council Regulation (EEC) No 793/93 on the evaluation and control of the risks of existing substances).

**16. OTHER INFORMATION**

The information and recommendations contained in the Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with our products, and determine its environmental compliance obligations under any applicable federal or state laws.