

Esso Rad**Section 1: MANUFACTURER/PREPARER INFORMATION & HAZARD WARNINGS**

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WHMIS HAZARD SYMBOLS & DEFINITIONS

Class D-1: Poisonous & infectious material, immediate & serious toxic effects

Section 2: HEALTH HAZARD DATA**ROUTES OF ENTRY/SIGNS & SYMPTOMS OF ACUTE EXPOSURE:**

EYES: Slightly irritating, but will not injure eye tissue. **SKIN:** Low toxicity. Frequent or prolonged contact may irritate the skin. **INHALATION:** Negligible hazard at normal temperatures (up to 38°C). Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes, nose, throat and lungs. High vapour concentrations are irritating to the eyes, nose, throat and lungs; may cause headaches and dizziness, may be anaesthetic and may cause other central nervous system effects. **INGESTION:** Moderately toxic. (LD50 = >1300 mg/kg Human; > 8500 mg/kg Rat).

Chronic Effects: This product contains ethylene glycol (EG). Repeated high dose exposure to ethylene glycol by ingestion has caused kidney damage, neurological effects, degeneration of the liver and changes in blood chemistry and circulating blood cells in laboratory animals. Repeated overexposure to ethylene glycol has the potential to cause similar toxic effects in humans. Ethylene glycol has been shown to cause developmental and reproductive effects at high dose levels in laboratory animals. These findings are of uncertain significance to humans, but precautionary measures should be taken to avoid exposure during pregnancy. This product contains Diethylene Glycol (DEG). Prolonged and repeated exposure through ingestion of DEG may result in toxic effects on the kidney. Contains sodium tetraborate pentahydrate. Studies have shown that sodium tetraborate pentahydrate can cause infertility in laboratory animals. **Carcinogens:** N/R. **Medical Conditions Aggravated by Exposure:** N/R.

EMERGENCY & FIRST AID PROCEDURES:

EYES: Flush with large amounts of water until irritation subsides. If irritation persists, get medical attention. **SKIN:** Flush with large amounts of water. Use soap if available. Remove severely contaminated clothing (including shoes) and launder before reuse. If irritation persists, seek medical attention. **INHALATION:** Use appropriate respiratory protection to immediately remove affected victim from exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Call for prompt medical attention. **INGESTION:** If swallowed, DO NOT INDUCE VOMITING. Keep at rest. Seek prompt medical attention.

Section 3: PREVENTATIVE MEASURES

Respiratory Protection: Where concentrations in air may exceed occupational exposure limits and where engineering, work practices or other means of exposure reduction are not adequate, approved respirators may be necessary.

Ventilation: Local exhaust ventilation is recommended to control emissions near the source. Laboratory samples should be handled in a fume hood. Provide mechanical ventilation of confined spaces.

Gloves: Chemical impervious gloves where contact is likely. **Eye Protection:** Safety goggles where contact is likely; safety glasses with side shields where only incidental contact is likely. **Other Protective Measures:** Chemical-resistant overalls where contact is likely.

Work/Hygienic Practices: Avoid skin or eye contact. Avoid breathing vapour or mists. Poison; do not drink this material. In keeping with good hygiene practices, wash hands thoroughly after handling.

Handling and Storing: Keep containers closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials. Store and load at normal (up to 38°C) temperature and at atmospheric pressure. Empty containers may contain product residue. Do not pressurise, cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

KEEP OUT OF THE REACH OF CHILDREN AND ANIMALS.

N/A=Not Applicable. N/E=Not Evaluated/Established. N/R=Not Reported by Manufacturer.

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Section 4: HAZARDOUS COMPONENTS & EXPOSURE LIMITS

Hazardous Component Name	CAS #	OSHA PEL	ACGIH-TLV	Other Limit	% Wt
Monoethylene Glycol	107-21-1	N/R	N/R	39.4 ppm (100 mg/M3) CEIL - aerosol	30-100
Diethylene glycol	111-46-6	N/R	N/R	10 mg/M3 (aerosol** 50 ppm (total**	1.5-5
Sodium Tetraborate Pentahydrate	1330-43-4	N/R	1 mg/M3	N/R	0.5-1.5

**Supplier recommended limit based upon the AIHA WEEL. Local regulated limits may vary.

§ indicates a toxic chemical subject to the reporting requirements of SARA Title III, Section 313.

† indicates a chemical known to the State of California to cause cancer, birth defects or other reproductive harm per Proposition 65.

Section 5: PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point:	166°C	Specific Gravity:	1.11 @ 16°C
Vapor Pressure:	< 1 kPa @ 38°C	Percent Volatile:	N/R
Vapor Density (Air=1):	2.15	Evaporation Rate:	< 1 (n-butylacetate=1)
Solubility in Water:	100%	pH:	11.0 (50% solution with water)
Appearance/Odor:	Clear green liquid/Odourless.		

Section 6: FIRE & EXPLOSION HAZARD DATA

Flash Point (Method):	119° C (COC ASTM D-92)	Flammable Limits, LEL:	3.2%	UEL:	15.3%
Extinguishing Media:	Alcohol type foam, dry chemical or water spray. Use water spray to cool fire exposed surfaces and to protect personnel.				
Special Firefighting Procedures:	Shut off fuel to fire. Respiratory and eye protection required for fire fighting personnel. Avoid spraying water directly into storage containers due to danger of boilover. A self-contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of an SCBA may not be required.				
Unusual Fire and Explosion Hazards:	Low hazard; liquids may burn upon heating to temperatures at or above the flash point. Toxic gases will form upon combustion: smoke, carbon monoxide and carbon dioxide under thermal decomposition.				

Section 7: REACTIVITY DATA

Stability: Stable. **Hazardous Polymerisation:** Will not occur. **Conditions to Avoid:** N/R. **Incompatibility:** Strong oxidising agents. **Hazardous Decomposition Products:** None.

Section 8: SPILLS, DISPOSAL & ADDITIONAL INFORMATION

Spill/Leak Procedures:	Eliminate sources of ignition. Keep public away. Prevent additional discharge of material, if possible to do so without hazard. For land spills: Prevent spills from entering sewers, watercourses or low areas. Contain spilled liquid with sand or earth. Recover by pumping or by using a suitable absorbent. For water spills: Keep shipping traffic away. Consult health information and protection section regarding possible hazards.
Waste Disposal:	Consult an expert on disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill.
Additional Information:	N/A

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