

## MATERIAL SAFETY DATA SHEET

### SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

**Product identifier:** ACES IV

**Product use:** Multifunction Gasoline additive

**Supplier name and address:**

*American Clean Energy Systems, Inc.*

PO Box 175

Volant, PA, USA

16156

Phone: (440) 821-9040

**Synonyms:** ACES IV, ACES IV-2S, ACES IV-P

**Manufacturer's name and address:**

*American Clean Energy Systems, Inc.*

8679 Freeway Drive

Macedonia, OH, USA

44056-1535

**24 Hour Emergency Telephone #:** Infotrac (800) 535-5053

### SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>%(weight)</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
			<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Aromatic Petroleum Solvent	68477-31-6	40 - 70	N/Av	N/Av	N/Av	N/Av
Hydrocarbon Wax/ Paraffin Wax	8002-74-2	15 - 40	2 mg/m <sup>3</sup> (fume)	N/Av	2 mg/m <sup>3</sup> (final rule/ vacated value)	N/Av
Toluene	108-88-3	<1	50 ppm (skin)	N/Av	200 ppm	N/Av

This material is Classified as hazardous under OSHA Regulations (29CFR 1910.1200).

### SECTION 3 — HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

Pourable liquid, with tan or yellow colour. Mild ethereal odour.

Warning! Flammable liquid and vapour. Harmful or fatal if swallowed. Can enter lungs and cause damage.

Harmful if inhaled. Can cause headache, nausea and other central nervous system effects. May cause skin irritation.

Contains material that may cause birth defects, based on animal data.

#### \*\*\*POTENTIAL HEALTH EFFECTS\*\*\*

**Target organs:** Eyes, skin, respiratory system, digestive system, central nervous system

**Routes of exposure:** Skin contact, eye contact, inhalation, ingestion, absorption.

**Signs and symptoms of short-term (acute) exposure:**

*Inhalation:* Inhalation may cause irritation to the nose, throat, and respiratory tract. Central nervous system (CNS) depression may result. Symptoms of CNS depression may include headache, nausea, dizziness, drowsiness, incoordination, loss of consciousness and death.

*Skin contact:* Skin contact may cause moderate irritation. This product can be absorbed through the skin. Absorption may result in symptoms of CNS depression.

*Eye contact:* Direct eye contact may cause mild irritation.

*Ingestion:* Swallowing may cause irritation of the mouth, throat and stomach. Symptoms may include headache, nausea, dizziness, drowsiness and other symptoms of CNS depression. This product may present an aspiration hazard. Aspiration into the lungs following inhalation or ingestion may cause life-threatening lung injury.

**Chronic effects:** Repeated or prolonged exposure may result in drying, cracking and defatting of the skin (dermatitis).

**Conditions aggravated by exposure:** Pre-existing skin, eye, respiratory and central nervous system disorders.

**Carcinogenic status:** See TOXICOLOGICAL INFORMATION, Section 11.

**Additional health hazards:** Possible development hazard. See TOXICOLOGICAL INFORMATION, Section 11.

**Potential environmental effects:** See ECOLOGICAL INFORMATION, Section 12.

### SECTION 4 — FIRST AID MEASURES

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- Inhalation:** If inhaled, immediately remove victim to fresh air. If not breathing, give artificial respiration. Obtain medical attention immediately.
- Skin contact:** Immediately remove contaminated clothing and shoes. Wash skin thoroughly with mild soap and running water. Obtain medical attention if irritation persists. Launder clothing before reuse.
- Eye contact:** Flush eyes with running water for at least 15 minutes. Obtain medical attention if irritation persists.
- Ingestion:** If swallowed, DO NOT induce vomiting. Obtain medical attention immediately. Never give anything by mouth to an unconscious or convulsing person. Guard against aspiration into the lungs.
- Note to Physicians:** Treat symptomatically.

## SECTION 5 — FIRE FIGHTING MEASURES

- Fire hazards/conditions of flammability** Flammable liquid. This material will ignite when exposed to extreme heat, direct flame and other sources of ignition. Vapours are heavier than air and will collect in low-lying areas and confined spaces. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Product will float and may be re-ignited at the water's surface.
- Flammability classification (OSHA 29 CFR 1910.1200):** Flammable Liquid Class 1C.
- Flash point (Method):** 43.33°C / 110°F (COC)
- Auto-ignition temperature:** N/Av
- Lower flammable limit (% by volume):** 2.1
- Upper flammable limit (% by volume):** 20.1
- Explosion data:** *Sensitivity to mechanical impact / static discharge:* Not expected to be sensitive to mechanical impact. Can accumulate static charge by flow or agitation. Vapour may be ignited by static discharge.
- Oxidizing properties:** N/Av
- Suitable extinguishing media:** Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet.
- Special fire-fighting procedures/equipment:** Firefighters should wear proper protective equipment and a self-contained breathing apparatus. Move containers from fire area if it can be done without risk. Water spray may be useful in minimizing or dispersing vapours, and cooling equipment and containers exposed to heat and flame. Avoid spreading burning liquid with water spray used for cooling purposes.
- Hazardous combustion products:** Carbon oxides, nitrogen oxides, reactive hydrocarbons, aldehydes and other irritating fumes and smoke.

## SECTION 6 — ACCIDENTAL RELEASE MEASURES

- Personal precautions:** Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.
- Environmental precautions:** Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. Dike far ahead of the spill with non-combustible, inert absorbent material.
- Spill response/Cleanup:** Eliminate all sources of ignition. Use only non-sparking tools during the clean up process. Ventilate area of release. Stop leak if you can do so without risk. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand, earth), then place absorbent material into a suitable container for later disposal (see Section 13). Contaminated absorbent material may pose the same hazards as the spilled product. Notify the appropriate authorities as required.
- Prohibited materials:** None known.
- Special spill response procedures:** If a spill/release in excess of EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).  
DOT/CERCLA Reportable quantity (RQ): Toluene (1000 lbs)

## SECTION 7 — HANDLING AND STORAGE

- Safe handling procedures:** This material is a flammable liquid. Wear appropriate protective equipment during handling. Use in a well-ventilated area. Avoid inhalation of vapors. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Keep away from heat, flame and other sources of ignition. Use non sparking tools. Ground all equipment during handling operations. Keep away from incompatibles (see Section 10). Use caution when opening cap. Keep container tightly closed when not in use. Assume empty containers contain residues, which are hazardous.

**Storage requirements:** Store in a cool, dry, well-ventilated area away from all sources of ignition, incompatible materials and direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

**Special packaging materials:** Always keep in containers made of the same materials as the supply container.

**SECTION 8 — EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Ventilation and engineering controls:** Use in well-ventilated area. Local mechanical exhaust / extraction ventilation may be required if used indoors on a continuous basis.

**Respiratory protection:** Respiratory protection is required if airborne concentrations are above recommended TLV's or are not known. Use NIOSH/MSHA-approved respirators. In emergency situations or when concentrations are not known, a self-contained breathing apparatus may be required. Advice should be sought from respiratory protection specialists.

**Skin protection and other protective equipment:** It is recommended that protective gloves impervious to the material be worn at all times during use. Confirmation of what type of material is most suitable for the intended application, should be obtained from glove suppliers. An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

**Eye/face protection:** Chemical splash goggles to prevent direct contact, irritation, or injury.

**General hygiene considerations:** Avoid breathing vapors or mists. Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke when working. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

**Permissible exposure levels:** For individual ingredient exposure levels, See Section 2.

**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

**Physical form, colour and odour:** Pourable liquid, with tan or yellow colour. Mild ethereal odour.

**Odour threshold:** N/Av

**Boiling point:** 64.4°C / 136°F

**Specific gravity (water=1):** (60/60) 0.948

**Coefficient of oil/water distribution:** < 1

**Solubility in water (%):** 1.9

**Volatile organic compounds (VOC's):** N/Av

**pH:** 9.2

**Evaporation rate (nBuAC=1):** 89.1

**Melting/freezing point:** (10) -53.3°C / -64°F

**Vapour pressure (PSI):** 1.4

**Vapour density (Air=1):** 2.6

**Percent Volatile by Weight:** < 1

**SECTION 10 — STABILITY AND REACTIVITY**

**Stability and reactivity:** Stable under the recommended storage and handling conditions prescribed.

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Extreme heat, open flame and direct sunlight.

**Materials to avoid (Incompatibles)** Strong oxidizing agents and oxidizers, strong acids, sulphur dichloride, tetranitromethane, uranium hexafluoride.

**Hazardous decomposition products:** None known. Refer to 'Hazardous combustion products', Section 5.

**SECTION 11 — TOXICOLOGICAL INFORMATION**

**Toxicological data:** There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

Ingredients	LC <sub>50</sub> (ppm/4hr) inh, rat	LD <sub>50</sub> (mg/kg)	
		oral, rat	dermal, rabbit
Aromatic petroleum solvent	N/Av	2551	N/Av
Hydrocarbon wax/Paraffin wax	N/Av	N/Av	N/Av
Toluene	7350	2600-7500	12225

**Carcinogenic status:** None of the ingredients listed are classified as carcinogenic by IARC, ACGIH, or NTP.

**SECTION 11 — TOXICOLOGICAL INFORMATION Continued**

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**Reproductive effects, Teratogenicity, Mutagenicity:** This product contains Toluene. Toluene may cause embryotoxic and teratogenic effects (e.g. reduced fetal weight, behavioural effects) at doses which are not maternally toxic.

**Sensitization to material:** No skin or respiratory sensitization effects are known.

Other important hazards: None known.

**Synergistic materials:** Not available.

## SECTION 12 — ECOLOGICAL INFORMATION

**Chemical fate information:** The ecological characteristics of this product have not been fully investigated. The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. Do not discharge product unmonitored into the environment.

**Ecotoxicological information:** There is no data available on the product itself.

**Aquatic toxicity:** There is no data available on the product.

## SECTION 13 — DISPOSAL CONSIDERATIONS

**Handling for disposal:** Empty containers may contain product residue or vapors. Handle according to recommendations listed in Section 7.

**Methods of disposal:** Dispose in accordance with all applicable federal, state, provincial and/or local regulations. Contact your local, state, provincial, and/or federal environmental agency for specific rules.

**RCRA:** If this product, as supplied, becomes a waste, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. Under the RCRA, it is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

## SECTION 14 — TRANSPORT INFORMATION

**US 49 CFR information:**

Proper Shipping Name:	FLAMMABLE LIQUID, N.O.S. (Toluene)		
Hazard Class – Primary:	3	Identification No.:	UN1993
Hazard Class(es) – Subsidiary:	None	Packing Group:	III
RQ Components:	Toluene (1000 lbs.)		
Marine pollutant:	None		

**Special Transportation Notes:** For shipments by ground within the United States, the Limited Quantity or Consumer commodity exceptions may apply. Under the US 49 CFR, refer to section 173.150 for additional exception requirements.

**Canadian Transportation of Dangerous Goods Regulations (TDGR) Shipping Information:**

Proper Shipping Name:	FLAMMABLE LIQUID, N.O.S. (Toluene)		
Identification No.:	UN1993	Packing Group:	III
Primary Class:	3	Subsidiary Class(es):	None

**Other Shipping Information:** This product may be shipped by ground within Canada, as a 'Consumer commodity' or a 'Limited Quantity', when transported in containers which hold 5 Litres or less of the material. Refer to Section 1.17 for additional requirements for Limited Quantities and Consumer Commodities.

## SECTION 15 — REGULATORY INFORMATION

**US Federal Information:**

**TSCA information:** All ingredients are listed on the TSCA inventory.

**CERCLA Reportable Quantity (RQ) (40 CFR 117.302):** Toluene ( 1000 lbs. )

**SARA Title III:**

*Sec. 302, Extremely Hazardous Substances, 40 CFR 355:* No Extremely Hazardous Substances are present.

*SEC. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes:* Immediate (Accute); Delayed (chronic);

Fire Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals.

*Sec. 313 Toxic Chemicals Notification, 40 CFR 372:* This material may be subject to SARA notification requirements, since it contains Toluene, a Toxic Chemical constituent above the *de minimus* concentration

## SECTION 15 — REGULATORY INFORMATION Continued

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**US State Right to Know Laws:**

**California Proposition 65:** This product contains Toluene, which is known to the state of California to cause developmental harm

**New Jersey Labeling Requirements:** This product contains the following substances that may be required to be disclosed on product labeling:

Chemical Name	CAS #	%(weight)	New Jersey Hazardous Substance
Aromatic petroleum solvent	68477-31-6	40-70	No
Hydrocarbon wax/Paraffin wax	8002-74-2	15-40	No
Toluene	108-88-3	<1	Yes

**International Information:**

**Canadian WHMIS Classification:** **Class B2** (Flammable Liquids); **Class D2A** (Materials Causing Other Toxic Effects – Very Toxic Material); **Class D2B** ( Materials Causing Other Toxic Effects – Toxic Material)

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

**Canadian CEPA information:** All ingredients are listed on the DSL.

**SECTION 16 — OTHER INFORMATION**

**NFPA Rating:**

0 – Minimal    1 – Slight    2 – Moderate    3 – Serious    4 - Severe

Health: 1    Flammability: 3    Instability: 0    Special Hazard: None

**HMIS Rating:**

\* - Chronic hazard    0 – Minimal    1 – Slight    2 – Moderate    3 – Serious    4 – Severe  
 Health: \*2    Flammability: 3    Reactivity: 0

- Legend:** ACGIH: American Conference of Governmental Industrial Hygienists  
 CAS: Chemical Abstract Services  
 CEPA: Canadian Environmental Protection Act  
 COC: Cleveland Open Cup  
 DSL: Domestic Substances List  
 HMIS: Hazardous Materials Identification System  
 HSDB: Hazardous Substances Data Bank  
 IARC: International Agency for Research on Cancer  
 N/Ap: not applicable  
 N/Av: not available  
 NIOSH: National Institute of Occupational Safety and Health  
 OSHA: Occupational Safety & Health Administration  
 PEL: Permissible Exposure Limit  
 PSI: Pounds per Square Inch  
 RTECS: Registry of Toxic Effects of Chemical Substances  
 TSCA: Toxic Substances Control Act  
 TLV: Threshold Limit Values  
 WHMIS: Workplace Hazardous Materials Information System

**ACES IV**

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- References:
1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2006.
  2. International Agency for Research on Cancer Monographs, searched 2007.
  3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2007 (Chempendium and RTECs).
  4. Material Safety Data Sheet from manufacturer.
  5. US EPA Title III List of Lists – January 27, 2005 version.
  6. California Proposition 65 List – September 29, 2006 version.

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