



## SAFETY DATA SHEET

### 1. INFORMATION

**Product Name:** SUNOCO E85-R

**Product Use:** Unleaded racing gasoline with ethanol. For use in competition racing vehicles

**Synonym:** Oxygenated Unleaded Racing Gasoline

**Manufacturer:**

Sunoco, Inc. (R&M)
1735 Market Street LL
Philadelphia, Pennsylvania, 19103-7583
srftch@sunocoinc.com Sunoco Race Fuels Technical Department
<a href="http://sunocoinc.com/site/Consumer/RaceFuels/">http://sunocoinc.com/site/Consumer/RaceFuels/</a>
1-800-722-3427

**Emergency Phone Numbers:**

Chemtrec (800) 424-9300  
Sunoco Inc. (800) 964-8861

**SDS Information:**

Product Safety Information	(888) 567-3066
Email	sunocomsds@sunocoinc.com

### 2. HAZARDS IDENTIFICATION



Category	Symbol	Signal Word	Hazard Statement
Category 2 Flammable Liquid	Flame	Danger	Highly flammable liquid and vapor (H225)

Category 1 Aspiration Toxicity	Health Hazard	Danger	May be fatal if swallowed and enters airways (H304)
Category 1B Carcinogenicity	Health Hazard	Danger	May cause cancer (H350).
Category 2 Target organ system toxicant (Single exposure)	Health Hazard	Warning	May cause drowsiness or dizziness (H336)
Category 2 Target organ system toxicant (Repeated exposure)	Health Hazard	Warning	May cause damage to central nervous system, liver, kidney, cardiovascular and respiratory system through prolonged and repeated exposure.
Category 2 Skin Irritation	Exclamation Mark	Warning	Causes skin irritation (H315)
Category 2A Eye Irritation	Exclamation Mark	Warning	Causes eye irritation (H320)
Category 2 Reproductive Toxicity	Exclamation Mark	Warning	Suspected of damaging fertility of the unborn child. (H361)
Category 4 Acute Toxicity (Oral, Dermal, Inhalation)	Exclamation Mark	Warning	Harmful if swallowed (H302). Harmful in contact with skin (H312). Harmful if inhaled (H332).
Category 2 Aquatic Environment (Acute)	No Symbol	No signal word	Toxic to aquatic life
Category 2 Aquatic Environment (Chronic)	Environment	No signal word	Toxic to aquatic life with long lasting effects(H411).

## Precautionary Statements

Category	Precautionary Statement Prevention	Precautionary Statement Response	Precautionary Statement Storage	Precautionary Statement Disposal
Cat 2 Flammable	P210,P233,P240,P241 P242,P243, P280	P303+P361+ P353+P370+P378	P403+P235	P501
Cat 1 Aspiration Toxicity		P301+P310	P405	P501
Cat 1B Carcinogenicity	P201,P202,P281	P308+P313	P405	P501
Category 2 Target organ system toxicant (Single exposure)	P261, P271	P304+P340+P312	P403+P233	P501
Category 2 Target organ system toxicant (Repeated exposure)	P260	P314		P501
Category 2 Skin Irritation	P264, P280	P302+P352, P321 P332+P313, P362		
Category 2A Eye Irritation	P264, P280	P305+P351+P338 P337+313		
Category 2 Reproductive Toxicity	P201,P202,P281	P308+P313	P405	P501
Category 4 Acute Toxicity (Oral, Dermal, Inhalation)	Oral:P264,P270 Dermal:P280 Inh: P261,P271	Oral:P301+P312, P330 Dermal:P302+P352 P312,P322, P363 Inh:P304+P340+312		P501 (all routes)
Category 2 Aquatic Environment (Chronic)	P273	P391		P501

P210	Keep away from heat/sparks/open flames/hot surfaces. — No smoking
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/.../equipment
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

P303+P361+P353, P370+P378	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. In case of fire Use Alcohol resistant foam for extinction
P403	Store in a well-ventilated place.
P405	Store locked up
P264	Wash ... thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P314	Get medical advice/attention if you feel unwell
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P309+P311	IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
P271	Use only outdoors or in a well-ventilated area.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P321	Specific treatment (see ... on this label). Acute
P332+P313	If skin irritation occurs: get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+313	If eye irritation persists: Get medical advice/attention.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P281	Use personal protective equipment as required.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P301+P310, P331	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P363	Wash contaminated clothing before reuse.
P304+P340,P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

- EMERGENCY OVERVIEW**

Vapors may cause flash fire or explosion. Static accumulator. May form an ignitable vapor/air mixture.

**Hazards Ratings:**

Key: 0 = least, 1 = slight, 2 = moderate, 3 = high, 4 = extreme

	<u>Health</u>	<u>Fire</u>	<u>Reactivity</u>	<u>PPI</u>
NFPA	1	3	0	
HMIS	2	3	0	X

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	EINECS	CAS#	Amount Vol%	Classification
AKYLATE	265-068	64741-66-8	55 - 60	Asp Tox 1, Carc 1B, H304,H350
TOLUENE	203-625-9	108-88-3	25 - 35	Flam Liq 2, Repr.2 Asp. Tox 1, STOT RE2, Eye Irrit 2, Skin Irrit 2, STOT SE2 , H225, H361,H304, H373, H315,H336
ETHYL ALCOHOL	200-578-6	64-17-5	5 - 10	Flam. Liq2 H225
N-BUTANE	203-448-7	106-97-8	9 - 9	Flam Gas 1, H220

## **4. FIRST AID MEASURES**

- **INHALATION**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and continue to monitor. Get immediate medical attention.

- **SKIN**

Wash with soap and water for 20 minutes. Get medical attention if irritation develops or persists. Remove contaminated clothing. Wash clothing before reuse.

- **EYES**

Flush eye with water for 20 minutes. Get medical attention.

- **INGESTION**

If swallowed, immediately contact a physician or Poison Control Center. Never give anything by mouth to an intoxicated, unconscious or convulsing person. Get immediate medical attention. Do not induce vomiting!

**NOTE TO PHYSICIAN:** Catecholamines and similar adrenergic drugs are generally contraindicated because of potential for increased sensitivity of the heart from hydrocarbon overexposure and subsequent ventricular fibrillation. EKG monitoring may be indicated and bronchodilators should be selected with care.

## **5. FIRE FIGHTING MEASURES**

- **EXTINGUISHING MEDIA**

The following media may be used to extinguish a fire involving this material: Alcohol resistant foam.

- **FIRE FIGHTING INSTRUCTIONS**

Use water spray to cool fire exposed tanks and containers. Wear structural fire fighting gear. The use of fresh air equipment such as Self Contained Breathing Apparatus (SCBA) or Supplied Air Respirators should be worn for fire fighting if exposure or potential exposure to products of combustion is expected.

### **FLAMMABLE PROPERTIES**

**STATIC ACCUMULATOR.** This liquid may form an ignitable vapor-air mixture in closed tanks or containers

## **6. ACCIDENTAL RELEASE MEASURES**

Prevent ignition, stop leak and ventilate the area. Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Do not use spark-generating metals for sweeping up spilled material. Avoid runoff into storm sewers and ditches which lead to waterways. Vapor can be controlled using a water fog. Water streams should not be directed to the liquid as this will cause the liquid to boil and generate more vapor. Keep personnel upwind from leak. Use appropriate personal protective equipment as stated in Section 8 of this MSDS. Advise the Environmental Protection Agency (EPA) and appropriate state agencies, if required.

## **7. HANDLING AND STORAGE**

- **HANDLING**

Use only in a well-ventilated area. Follow all MSDS/label precautions even after container is emptied because it may retain product residue. Use only in a well-ventilated area. **STATIC ACCUMULATOR.** This liquid may form an ignitable vapor-air mixture in closed tanks or containers. This liquid may accumulate static electricity even when transferred into properly grounded containers. Bonding and grounding may be insufficient to remove static electricity. Static electricity accumulation may be significantly increased by the presence of small quantities of water. Always bond receiving container to the fill pipe before and during loading, following NFPA-77 and/or API RP 2003 requirements. Automatic gauging devices and other floats in vessels or tanks which contain static accumulating liquids should be electrically bonded to the shell.

Bonding and grounding alone may be inadequate to eliminate fire and explosion hazards associated with electrostatic charges. In addition to bonding and grounding, efforts to mitigate the hazards of an electrostatic discharge may include, but are not limited to, ventilation, inerting and/or reduction of transfer velocities. Always keep the nozzle in contact with the container throughout the loading process. Do not fill any portable containers in or on a vehicle. Special precautions, such as reduced loading rates and increased monitoring, must be observed during "switch loading" operations (i.e. loading this material in tanks or shipping compartments that previously contained middle

distillates or similar products). Non-equilibrium conditions may increase the risks associated with static electricity such as tank and container filling, tank cleaning, sampling, gauging, loading, filtering, mixing, agitation, etc. Dissipation of electrostatic charges may be improved with the use of conductivity additives when used with other mitigating efforts, including bonding and grounding.

Avoid breathing (dust, vapor, mist, gas). Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Never siphon by mouth. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged, and promptly returned to a drum reconditioned, or properly disposed of.

- **STORAGE**

Keep away from heat, sparks, and flame. Keep container closed when not in use. Store in a cool dry place. Consult NFPA and / or OSHA codes for additional information. NFPA class IB storage. Flash point is less than 73 degrees F and boiling point is greater than or equal to 100 degrees F. Outside or detached storage is preferred.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **EXPOSURE GUIDELINES**

AKYLATE	Sunoco	100 PPM TWA
TOLUENE	EU OCCUPATIONAL EXPOSURE (2006/15/EC)	100 PPM STEL, 50 PPM TWA
TOLUENE	US OSHA	200 PPM TWA
ETHYL ALCOHOL	FRANCE OEL STEL (VLCT), TWA (VME)	5000 PPM STEL, 1000 PPM TWA
ETHYL ALCOHOL	UNITED KINGDOM WEL	1000 PPM TWA
ETHYL ALCOHOL	US OSHA	1000 PPM TWA
N-BUTANE	FRANCE OEL (VME) TWA	800 PPM TWA
N-BUTANE	UNITED KINGDOM WEL	750 PPM STEL, 600 PPM TWA

Consult With a Health and Safety Professional for Specific Selections

- **ENGINEERING CONTROLS**

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use with adequate ventilation. Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

- **PERSONAL PROTECTION**

- **EYE PROTECTION**

Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent).

- **GLOVES or HAND PROTECTION**

The glove(s) listed below may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection. Protective gloves are recommended to protect against contact with product. Nitrile(>8 hrs); Viton(>8hrs); Teflon(>8hrs).

- **RESPIRATORY PROTECTION**

Concentration in air determines the level of respiratory protection needed. Use only NIOSH certified respiratory equipment. Half-mask air purifying respirator with organic vapor cartridges is acceptable for exposures to ten (10) times the exposure limit. Full-face air purifying respirator with organic vapor cartridges is acceptable for exposures to fifty (50) times the exposure limit. Exposure should not exceed the cartridge limit of 1000 ppm. Protection by air purifying respirators is limited. Use a positive pressure-demand full-face supplied air respirator or SCBA for exposures greater than fifty (50) times the exposure limit. If exposure is above the IDLH (Immediately Dangerous to Life and Health) or there is the possibility of an uncontrolled release, or exposure

levels are unknown, then use a positive pressure-demand full-face supplied air respirator with escape bottle or SCBA. Wear a NIOSH-approved (or equivalent) full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

▪ **OTHER**

Where splashing is possible, full chemically resistant protective clothing (e.g., acid suit) and boots are required. The following materials are acceptable for use as protective clothing: Nitrile; Viton; Teflon; Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Remove contaminated clothing and wash before reuse. For non-fire emergencies, positive pressure SCBA and structural firefighter's protective clothing will provide only limited protection.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical Property	Typical	Units
Appearance	Clear Green Liquid	N/A
Boiling Point (Initial)	80	F
Boiling Range	26.7	C
Liquid Conductivity	80-140	F
	26.6 -60	C
	<50 varies	pS/m
Flash Point	- 40 Est.	F
	-40	C
Melting Point	No Data	F
pH	Not Applicable	
Octanol/Water Partition Coefficient	2-7	N/A
Lower Explosion Limit	1.5	%
Upper Explosion Limit	7.6	%
Specific Gravity	0.76	N/A
Solubility In Water	NIL TO 15%	wt %
Odor	Gasoline Odor.	
Odor Threshold	<1	ppm
Vapor Pressure	5 - 16	psia
Viscosity (F)	no data	SUS
Viscosity (C)	no data	CsT
% Volatile Auto Ignition	100	wt %
	536 Est.	F
	280 Est.	C

**10. STABILITY AND REACTIVITY**

• **STABILITY**

Stable

• **CONDITIONS TO AVOID**

Avoid heat, sparks and open flame. Avoid static discharge.

• **INCOMPATIBILITY**

The following materials are incompatible with this product: Strong oxidizers; Alkaline materials; Acids; Chlorine; Concentrated oxygen; Halogens and halogenated compounds; Hydrogen peroxide;

• **HAZARDOUS DECOMPOSITION PRODUCTS**

Combustion may produce carbon monoxide, carbon dioxide and other asphyxiants.

- **HAZARDOUS POLYMERIZATION**

Will not polymerize.

## **11. TOXICOLOGICAL INFORMATION**

- **POTENTIAL HEALTH EFFECTS**

- **PRE-EXISTING MEDICAL CONDITIONS**

The following diseases or disorders may be aggravated by exposure to this product: Nervous system, respiratory system, lung (asthma-like conditions).

- **INHALATION**

High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness and even death). May cause serious disturbances of heart rhythm. Excessive exposure to mists or vapors generated by heat may cause irritation to eyes, nose, throat, lungs and respiratory tract. Solvent "huffing/sniffing" (abuse) or intentional prolonged overexposure to high levels of vapors can produce abnormal behavior, convulsions, hallucinations, delirium, nervous system damage, serious disturbances of heart rhythm and sudden death.

- **SKIN**

Skin absorption of the material is expected to be minimal. May cause mild to moderate irritation to the skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

- **EYES**

Contact with the eye may cause moderate to severe irritation with prolonged and repeated contact. Contact with the eye may cause redness, burning, tearing and/or blurred vision.

- **INGESTION**

Harmful or fatal if swallowed. Pulmonary aspiration hazard. While ingesting or vomiting, may enter lungs and produce damage. Irritating to mouth, throat, and stomach. May produce central nervous system effects, which includes dizziness, loss of balance and coordination, unconsciousness, coma and even death. Contains material or materials that can cause birth defects.

Component	Inhalation LC50 Rat	Oral LD50 Rat	Skin LD50 Rabbit
Alkylate	>5.0mg/L/4H	>7,000 mg/kg	>2000 mg/kg
Toluene	>26700 ppm/1H	636 mg/kg	8390 mg/kg
Ethyl Alcohol	124.7 mg/L/4H	1501 mg/kg	No data
N-Butane	658 gm/m3/4H	No data	No data

Repeated overexposure has caused a hearing loss in laboratory animals. Hours of exposure to high airborne concentrations of xylene, a minor component of this product, has caused a hearing loss in laboratory animals.

## **12. ECOLOGICAL INFORMATION**

Gasoline spills are toxic to fish and aquatic flora.

Ecotoxicity Alkylate – 64741-66-8

Freshwater Algae Data	72 Hr EC50 <i>Selenastrum capricornutum</i> : 30000 mg/L
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Ecotoxicity Toluene 108-88-3

Species	96 Hr LC50
<i>Pimephales promelas</i>	15.22-19.05 mg/L [flow-through] (1 day old); 12.6 mg/L [static];
<i>Oncorhynchus mykiss</i>	5.89-7.81 mg/L [flow-through]; 14.1-17.16 mg/L [static]; 5.8 mg/L [semi-static];
<i>Lepomis macrochirus</i>	11.0-15.0 mg/L [static];
<i>Poecilia reticulata</i>	28.2 mg/L [semi-static];



### Environmental Fate and Pathways

Unleaded gasoline data: partition into air 97-99.7%, soil 0.00 to 1.2%, water 0.003 to 2.7%, sediment 0.001 to 0.02.

### Photo-Degradation

Gasoline: Indirect photolysis: ½ life range = 0.789 to 15.985 days based on 12 hr day and gasoline constituents from m-xylene to isopentane, respectively.

### Biodegradation

Ethanol in gasoline: Readily biodegradable, as it is both a metabolite and nutrient for microbes.

## 13. DISPOSAL INFORMATION

Follow federal, state and local regulations. This material is a RCRA hazardous waste. Do not flush material to drain or storm sewer. Contract to authorized disposal service. EWC 13 07 02

## 14. TRANSPORT INFORMATION

<b>Governing Body</b>	<b>DOT</b>
Mode	Ground
Proper Shipping Name	Ethanol and Gasoline Mixture
Hazard Class	3 (Flammable liquid)
Packing Group	II
UN/UN No.	UN3475
Label	Flammable
<b>Governing Body</b>	<b>ARD/RID</b>
Mode	Ground
Proper Shipping Name	Ethanol and Gasoline Mixture
Hazard Class	3 (Flammable liquid)
Packing Group	II
UN/UN No.	UN 3475
Label	Flammable
Flashpoint	-40 F
<b>Governing Body</b>	<b>IMDG</b>
Mode	Vessel
Proper Shipping Name	Ethanol and Gasoline Mixture
Hazard Class	3 (Flammable liquid)
Packing Group	II
UN/UN No.	UN 3475
Label	Flammable
Flash point	-40 F cc

## 14. REGULATORY INFORMATION

Regulatory List	Component	CAS No.
ACGIH - Occupational Exposure Limits - Carcinogens	ETHYL ALCOHOL	64-17-5
ACGIH - Occupational Exposure Limits - Carcinogens	TOLUENE	108-88-3
CAA (Clean Air Act) - HON Rule - Organic HAPs	TOLUENE	108-88-3
CAA (Clean Air Act) - HON Rule - SOCM I Chemicals	TOLUENE	108-88-3
CAA - 1990 Hazardous Air Pollutants	TOLUENE	108-88-3
California - Prop. 65 - Developmental Toxicity	ETHYL ALCOHOL	64-17-5
California - Prop. 65 - Developmental Toxicity	TOLUENE	108-88-3
Canada - WHMIS - Ingredient Disclosure	BUTANE	106-97-8
Canada - WHMIS - Ingredient Disclosure	ETHYL ALCOHOL	64-17-5
Canada - WHMIS - Ingredient Disclosure	TOLUENE	108-88-3
CERCLA/SARA - Haz Substances and their RQs	TOLUENE	108-88-3
CERCLA/SARA - Section 313 - Emission Reporting	TOLUENE	108-88-3

CWA (Clean Water Act) - Hazardous Substances	TOLUENE	108-88-3
CWA (Clean Water Act) - Priority Pollutants	TOLUENE	108-88-3
CWA (Clean Water Act) - Toxic Pollutants	TOLUENE	108-88-3
IARC - Group 3 (not classifiable)	TOLUENE	108-88-3
Inventory - Australia (AICS)	ALKYLATE	Present
Inventory - Australia (AICS)	BUTANE	Present
Inventory - Australia (AICS)	ETHYL ALCOHOL	Present
Inventory - Australia (AICS)	TOLUENE	Present
Inventory - Canada - Domestic Substances List	ALKYLATE	Present
Inventory - Canada - Domestic Substances List	BUTANE	Present
Inventory - Canada - Domestic Substances List	ETHYL ALCOHOL	Present
Inventory - Canada - Domestic Substances List	TOLUENE	Present
Inventory - China	ALKYLATE	Present
Inventory - China	BUTANE	Present
Inventory - China	ETHYL ALCOHOL	Present
Inventory - China	TOLUENE	Present
Inventory - European EINECS Inventory	ALKYLATE	Present
Inventory - European EINECS Inventory	BUTANE	Present
Inventory - European EINECS Inventory	ETHYL ALCOHOL	Present
Inventory - European EINECS Inventory	TOLUENE	Present
Inventory - Japan - (ENCS)	BUTANE	Present
Inventory - Japan - (ENCS)	ETHYL ALCOHOL	Present
Inventory - Japan - (ENCS)	TOLUENE	Present
Inventory - Korea - Existing and Evaluated	ALKYLATE	Present
Inventory - Korea - Existing and Evaluated	BUTANE	Present
Inventory - Korea - Existing and Evaluated	ETHYL ALCOHOL	Present
Inventory - Korea - Existing and Evaluated	TOLUENE	Present
Inventory - Philippines Inventory (PICCS)	ALKYLATE	Present
Inventory - Philippines Inventory (PICCS)	BUTANE	Present
Inventory - Philippines Inventory (PICCS)	ETHYL ALCOHOL	Present
Inventory - Philippines Inventory (PICCS)	TOLUENE	Present
Inventory - TSCA - Sect. 8(b) Inventory	ALKYLATE	Present
Inventory - TSCA - Sect. 8(b) Inventory	BUTANE	Present
Inventory - TSCA - Sect. 8(b) Inventory	ETHYL ALCOHOL	Present
Inventory - TSCA - Sect. 8(b) Inventory	TOLUENE	Present

## **16. OTHER INFORMATION**

Follow all MSDS/label precautions even after container is emptied because it may retain product residue. Completely denatured alcohol. Unfit for human consumption. Keep out of reach of children. Precautionary labeling for pumps, portable containers, and drums is required. A "hazardous when empty" pictogram and D.O.T. flammable liquid label are also required for drums. Details available upon request. For use as motor fuel only. Do not use for any other purpose.