Safety Data Sheet Ethanol and Gasoline Mixture



Gulf Racing Fuels

12455 Westpark Drive Unit G-6 Houston, TX 77082 Ph: 281-496-5100

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Ethanol and Gasoline Mixture

Synonyms: E85 Fuel Ethanol, E98 Fuel Ethanol, Alternative Fuel Ethanol,

Ethyl Alcohol and Gasoline Mixture, Motor Fuel, Denatured (with Gasoline)

Ethanol, 888100008801

Product Use Description : Fuel

Company : For: Gulf Oil Co.

Chemtrec : (800) 424-9300

(Emergency Contact)

SECTION 2. HAZARDS IDENTIFICATION

Classifications Flammable Liquid – Category 1 or 2 depending on formulation.

Aspiration Hazard – Category 1. Carcinogenicity – Category 2

Specific Target Organ Toxicity (Repeated Exposure) – Category 2 Specific Target Organ Toxicity (Single Exposure) – Category 3

Skin Irritation – Category 2 Eye Irritation – Category 2B

Chronic Aquatic Toxicity - Category 2

Pictograms









Signal Word Danger

Hazard Statements Extremely flammable liquid and vapor.

May be fatal if swallowed and enters airways – do not siphon gasoline by mouth. Suspected of causing blood cancer if repeated over-exposure by inhalation and/or

skin contact occurs.

May cause damage to liver, kidneys and nervous system by repeated or prolonged

inhalation or skin contact.

Causes eye irritation. Can be absorbed through skin.

Repeated or prolonged skin contact can cause irritation and dermatitis. May cause drowsiness or dizziness. Extreme exposure such as intentional

inhalation may cause unconsciousness, asphyxiation and death.

Precautionary statements

Prevention Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flames, welding and hot surfaces.

No smoking.

Keep container tightly closed.

Ground and/or bond container and receiving equipment.

Use explosion-proof electrical equipment.

Use only non-sparking tools (if tools are used in flammable atmosphere).

Take precautionary measures against static discharge.

Wear gloves, eye protection and face protection (as needed to prevent skin

and eye contact with liquid).

Wash hands or liquid-contacted skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Do not breathe vapors.

Use only outdoors or in a well-ventilated area.

Response In case of fire: Use dry chemical, CO2, water spray or fire fighting foam to

extinguish.

If swallowed: Immediately call a poison center, doctor, hospital emergency room, medical clinic or 911. Do NOT induce vomiting. Rinse mouth. If on skin (or hair): Take off immediately all contaminated clothing. Rinse

skin with water/shower.

If in eye: Rinse cautiously with water for several minutes. Remove contact lenses,

if present and easy to do. Continue rinsing.

If skin or eye irritation persists, get medical attention.

If inhaled: Remove person to fresh air and keep comfortable for breathing.

Get medical attention if you feel unwell.

Storage Store in a well ventilated place. Keep cool. Store locked up. Keep container

tightly closed. Use only approved containers. Some containers not approved for

gasoline may dissolve and release flammable gasoline liquid and vapors.

Disposal Dispose of contents/containers to approved disposal site in accordance with

local, regional, national, and/or international regulations

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS Component CAS-No. Weight % Ethanol; Ethyl alcohol 64-17-5 60 - 85% Gasoline, natural; Low boiling point naphtha 8006-61-9 1 - 7%

Pentane	109-66-0	0.0 - 5%
Benzene (Annual Average 0.62%)	71-43-2	0.0 - 1.1%
Toluene	108-88-3	0.0 - 2%
Butane	106-97-8	0.1 - 5%
Xylene	1330-20-7	0.0- 2%

SECTION 4. FIRST AID MEASURES

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If

breathing is difficult, give oxygen. Seek medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water. Take off

contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Contaminated leather, particularly footwear, must be discarded. Note that contaminated clothing may be a fire hazard. If skin irritation persists,

seek medical attention.

Eye contact : Remove contact lenses. Rinse immediately with plenty of water, also under the

eyelids, for at least 15 minutes. If eye irritation persists, seek medical attention.

Ingestion : If swallowed Do NOT induce vomiting. Aspiration of material into lungs can cause

pulmonary edema. Never give anything by mouth to an unconscious person.

Seek medical attention immediately.

Notes to physician : Symptoms: Dizziness, Discomfort, Headache, Nausea, Kidney disorders, Liver

disorders. Aspiration may cause pulmonary edema and pneumonitis. Swallowing ethanol and gasoline mixture is more likely to be fatal for small children than

adults, even if aspiration does not occur.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide blanket, Water spray, Dry chemical, Foam, SMALL FIRES: Any

extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, or Halon. LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Specific hazards during fire : Fire Hazard Fire will produce dense black smoke containing hazardous

fighting

combustion products (see heading 10). Flash back possible over considerable

distance.

Special protective equipment

for fire-fighters

Use NIOSH/MSHA approved positive pressure self-contained breathing apparatus and fully protective clothing such as bunker gear if needed to prevent exposure.

Further information

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam. Exposure to decomposition products may be a hazard to health. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water may be subject to disposal regulations.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions

: Evacuate personnel to safe areas. Ventilate the area. Remove all sources of ignition. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental precautions

Do not contaminate surface water. Should not be released into the environment. Authorities should be advised if significant releases cannot be contained.

Methods for cleaning up

Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- Keep away from fire, sparks and heated surfaces. No smoking near areas where material is stored or handled. The product should only be stored and handled in areas with intrinsically safe electrical classification.
- : Hydrocarbon liquids including this product can act as a non-conductive flammable liquid (or static accumulators), and may form ignitable vapor-air mixtures in storage tanks or other containers. Precautions to prevent static-initated fire or explosion during transfer, storage or handling, include but are not limited to these examples:
 - (1) Ground and bond containers during product transfers. Grounding and bonding may not be adequate protection to prevent ignition or explosion of hydrocarbon liquids and vapors that are static accumulators.
 - (2) Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such gasoline or naphtha).
 - (3) Storage tank level floats must be effectively bonded.

For more information on precautions to prevent static-initated fire or explosion, see NFPA 77, Recommended Practice on Static Electricity (2007), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents (2008).

Conditions for safe storage, including incompatibilities

Keep away from flame, sparks, excessive temperatures and open flame. Use approved containers. Keep containers closed and clearly labeled. Empty or partially full product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose containers to sources of ignition. Store in a well-ventilated area. The storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning

Petroleum Storage Tanks".

Reports suggest that government-mandated ethanol, if present, may not be compatible with fiberglass gasoline tanks. Ethanol may dissolve fiberglass resin, causing engine damage and possibly allow leakage of explosive gasoline

Keep away from food, drink and animal feed. Incompatible with oxidizing agents.
 Incompatible with acids.

: No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

List	Components	CAS-No.	Type:	Value
OSHA	Benzene	71-43-2	TWA	1 ppm
		71-43-2	STEL	5 ppm
		71-43-2	OSHA_ACT	0.5 ppm
OSHA Z1	Ethanol; Ethyl alcohol	64-17-5	PEL	1,000 ppm 1,900 mg/m3
	Xylene	1330-20-7	PEL	100 ppm 435 mg/m3
ACGIH	Ethanol; ethyl alcohol	64-17-5	TWA	1,000 ppm
	Toluene	108-88-3	TWA	50 ppm
	Xylene	1330-20-7	TWA	100 ppm
		1330-20-7	STEL	150 ppm
	Benzene	71-43-2	TWA	0.5 ppm
		71-43-2	STEL	2.5 ppm

Engineering measures

: Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use only intrinsically safe electrical equipment approved for use in classified areas.

Eye protection

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying. Ensure that eyewash stations and safety showers are close to the workstation location.

Hand protection

: Gloves constructed of nitrile or neoprene are recommended. Consult manufacturer specifications for further information.

Skin and body protection

If needed to prevent skin contact, chemical protective clothing such as of DuPont TyChem®, Saranex or equivalent recommended based on degree of exposure. The resistance of specific material may vary from product to product as well as with degree of exposure.

Respiratory protection : A NIOSH/ MSHA-approved air-purifying respirator with organic vapor cartridges or

canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection. Use a NIOSH/ MSHA-approved positive-pressure supplied-air respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygendeficient atmospheres, or any other circumstance where an air-purifying respirator

may not provide adequate protection.

Work / Hygiene practices : Emergency eye wash capability should be available in the near proximity to

operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when

laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and

gloves

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Clear to straw colored liquid

Odor Characteristic hydrocarbon-like

Odor threshold 0.5 - 1.1 ppm

pH Not applicable

Melting point/freezing point About -101°C (-150°F)

Initial boiling point & range Boiling point varies: 30 – 200°C (85 – 392°F)

Flash point $< -21^{\circ}\text{C} (-5.8^{\circ}\text{F})$

Evaporation rate Higher initially and declining as lighter components evaporate

Lower explosive limit $1.3\%(\lor)$

Vapor pressure 345 - 1,034 hPa at 37.8 °C (100.0 °F)

Vapor density (air = 1) Approximately 3 to 4

Relative density (water = 1) 0.8 g/mL
Solubility (in water) Negligible

Partition coefficient 2 – 7 as log Pow

(n-octanol/water)

Auto-ignition temperature Approximately 250°C (480°F)

Decomposition temperatureWill evaporate or boil and possibly ignite before decomposition occurs

Kinematic viscosity 0.64 to 0.88 mm²/s range reported for gasoline

Conductivity (conductivity can be reduced by environmental factors such as a decrease in temperature) Hydrocarbon liquids without static dissipater additive may have conductivity below 1 picoSiemens per meter (pS/m). The highest electro-static ignition risks are associated with "ultra-low conductivities" below 5 pS/m. See Section 7 for sources of information on defining safe loading and handling procedures for low conductivity products.

SECTION 10. STABILITY AND REACTIVITY

Reactivity: Vapors may form explosive mixture with air. Hazardous polymerization does not

occur.

Chemical stability Stable under normal conditions.

Possibility of hazardous Can

reactions

Can react with strong oxidizing agents, peroxides, alkaline products and strong acids. Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.

Conditions to avoid Avoid high temperatures, open flames, sparks, welding, smoking and other

ignition sources. Avoid static charge accumulation and discharge (see Section 7).

Hazardous decomposition

products

Ignition and burning can release carbon monoxide, carbon dioxide and non-

combusted hydrocarbons (smoke).

SECTION 11. TOXICOLOGICAL INFORMATION

Skin irritation Irritating to skin. Can be partially absorbed through skin.

Eye irritation Irritating to eyes.

Ingestion Aspiration hazard if liquid is inhaled into lungs, particularly from vomiting after

ingestion. Aspiration may result in chemical pneumonia, severe lung damage, respiratory failure and even death. Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous

(brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions,

loss of consciousness, coma, respiratory arrest and death may occur.

Inhalation and further information

Acute toxicity of benzene results primarily from depression of the central nervous system (CNS). Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, over excitation. Exposure to very high levels can result in unconsciousness and death.

Repeated over-exposure may cause liver and kidney injuries. Components of the product may affect the nervous system.

IARC has determined that gasoline and gasoline exhaust are possibly carcinogenic in humans. Inhalation exposure to completely vaporized unleaded gasoline caused kidney cancers in male rats and liver tumors in female mice. The U.S. EPA has determined that the male kidney tumors are species-specific and are irrelevant for human health risk assessment. The significance of the tumors seen in female mice is not known. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with effects to the central and peripheral nervous systems, liver, and kidneys. The significance of these animal models to predict similar human response to gasoline is uncertain.

This product contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia. Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.

7/13

Case Joine, natural; Low boiling point naphtha Section 1 Dose: 2,000 mg/kg	Component		
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		Dose: 2,501 mg/kg
		Acute inhalation toxicity: LC50 rat Dose: 101 mg/l Exposure time: 4 h
		Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation
		Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
		Carcinogenicity: N11.00422130
Benzene	71-43-2	Acute oral toxicity: LD50 rat Dose: 930 mg/kg
		Acute inhalation toxicity: LC50 rat Dose: 44 mg/l Exposure time: 4 h
		Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.
		Eye irritation: Classification: Irritating to eyes. Result: Risk of serious damage to eyes.
Pentane	109-66-0	Acute oral toxicity: LD50 rat Dose: 2,001 mg/kg
		Acute inhalation toxicity: LC50 rat Dose: 364 mg/l Exposure time: 4 h
		<u>Skin irritation:</u> Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.
		Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Cyclohexane	110-82-7	Acute dermal toxicity: LD50 rabbit Dose: 2,001 mg/kg
		Acute inhalation toxicity: LC50 rat Dose: 14 mg/l Exposure time: 4 h
		Skin irritation: Classification: Irritating to skin. Result: Skin irritation Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Ethylbenzene	100-41-4	Acute oral toxicity: LD50 rat Dose: 3,500 mg/kg
		Acute dermal toxicity: LD50 rabbit Dose: 15,500 mg/kg
		Acute inhalation toxicity: LC50 rat Dose: 18 mg/l Exposure time: 4 h
		Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Eye irritation: Classification: Irritating to eyes. Result: Risk of serious damage to eyes.
Heptane [and isomers]	142-82-5	Acute oral toxicity: LD50 rat Dose: 15,001 mg/kg

Acute inhalation toxicity: LC50 rat

Dose: 103 g/m3 Exposure time: 4 h

Skin irritation: Classification: Irritating to skin.

Result: Skin irritation

Repeated or prolonged exposure may cause skin irritation and dermatitis, due to

degreasing properties of the product.

Eye irritation: Classification: Irritating to eyes.

Result: Mild eye irritation

N-hexane 110-54-3 <u>Acute oral toxicity:</u> LD50 rat

Dose: 25,000 mg/kg

Acute dermal toxicity: LD50 rabbit

Dose: 2,001 mg/kg

Acute inhalation toxicity: LC50 rat

Dose: 171.6 mg/l Exposure time: 4 h

Skin irritation: Classification: Irritating to skin.

Result: Skin irritation

Eye irritation: Classification: Irritating to eyes.

Result: Mild eye irritation

Teratogenicity: N11.00418960

<u>Carcinogenicity</u> Benzene (CAS-No.: 71-43-2)

NTP Naphthalene (CAS-No.: 91-20-3)

Benzene (CAS-No.: 71-43-2)

IARC Gasoline, natural; Low boiling point naphtha (CAS-No.: 8006-61-9)

Naphthalene (CAS-No.: 91-20-3) Benzene (CAS-No.: 71-43-2) Ethylbenzene (CAS-No.: 100-41-4)

OSHA Benzene (CAS-No.: 71-43-2)

CA Prop 65 WARNING! This product contains a chemical known to the State of California to

cause birth defects or other reproductive harm.

Toluene (CAS-No.: 108-88-3) Benzene (CAS-No.: 71-43-2)

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information

Keep out of sewers, drainage areas, and waterways. Report spills and releases, as

applicable, under Federal and State regulations.

Component:

Ethanol; Ethyl alcohol 64-17-5 <u>Toxicity to fish:</u>

LC50

Species: Leuciscus idus (Golden orfe)

Dose: 8,140 mg/l Exposure time: 48 h

Acute and prolonged toxicity for aquatic invertebrates:

EC50

Species: Daphnia magna (Water flea)

Dose: 9,268 - 14,221 mg/l Exposure time: 48 h **Pentane** 109-66-0 Acute and prolonged toxicity for aquatic invertebrates:

EC50

Species: Daphnia magna (Water flea)

Dose: 9.74 mg/l Exposure time: 48 h

Toluene 108-88-3 Toxicity to fish:

LC50

Species: Carassius auratus (goldfish)

Dose: 13 mg/l Exposure time: 96 h

Acute and prolonged toxicity for aquatic invertebrates:

EC50

Species: Daphnia magna (Water flea)

Dose: 11.5 mg/l Exposure time: 48 h Toxicity to algae:

C50

Species: Selenastrum capricornutum (green algae)

Dose: 12 mg/l Exposure time: 72 h

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal : Dispose of container and unused contents in accordance with federal, state and

local requirements.

SECTION 14. TRANSPORT INFORMATION

CFR

Proper shipping name : Ethanol and Gasoline Mixture

UN-No. : 3475
Class : 3
Packing group : II
Emergency Response : 127

Guidebook Number

TDG

Proper shipping name : Ethanol and Gasoline Mixture

UN-No. : UN3475

Class : 3
Packing group : II
Emergency Response : 127

Guidebook Number

IATA Cargo Transport

UN UN-No. : UN3475

Description of the goods : Ethanol and Gasoline Mixture

Class : 3
Packaging group : II
ICAO-Labels : 3
Packing instruction (cargo : 364

aircraft)

Packing instruction (cargo : Y341

aircraft)

IATA Passenger Transport

UN UN-No. : UN3475

Description of the goods **Ethanol and Gasoline Mixture**

: 3 Class Packaging group : 11 **ICAO-Labels** : 3 Packing instruction : 353

(passenger aircraft)

Packing instruction : Y341

(passenger aircraft)

IMDG-Code

UN-No. : UN3475

Description of the goods : Ethanol and Gasoline Mixture

Class Packaging group : 11 **IMDG-Labels** : 3 **EmS Number** : F-E S-D

Marine pollutant : No

SECTION 15. REGULATORY INFORMATION

TSCA Status : On TSCA Inventory

DSL Status : All components of this product are on the Canadian DSL list.

SARA 311/312 Hazards : Fire Hazard

> Acute Health Hazard Chronic Health Hazard

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIROMENT)

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as

the Clean Water Act may still apply.

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323) PENN RTK

Components CAS-No. 71-43-2 Benzene **Xylene** 1330-20-7 **Toluene** 108-88-3 Gasoline, natural; Low boiling point naphtha 8006-61-9 Ethanol; Ethyl alcohol 64-17-5

US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations MASS RTK

Section 670.000)

Components CAS-No. Benzene71-43-2Xylene1330-20-7Toluene108-88-3Gasoline, natural; Low boiling point naphtha8006-61-9Ethanol; Ethyl alcohol64-17-5

NJ RTK US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

ComponentsCAS-No.Benzene71-43-2Xylene1330-20-7Toluene108-88-3Gasoline, natural; Low boiling point naphtha8006-61-9Ethanol; Ethyl alcohol64-17-5

SARA III US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic

Chemicals (40 CFR 372.65) - Supplier Notification Required

 Components
 CAS-No.

 Toluene
 108-88-3

 Xylene
 1330-20-7

 Benzene
 71-43-2

California Prop. 65 : WARNING! This product contains a chemical known to the State of California to

cause cancer.

Benzene 71-43-2

WARNING! This product contains a chemical known to the State of California to

cause birth defects or other reproductive harm.

Toluene 108-88-3
Benzene 71-43-2

SECTION 16. OTHER INFORMATION

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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