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# MATERIAL SAFETY DATA SHEET

# SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### **PRODUCT**

Product Name: DENATURED FUEL ETHANOL

Product Description: Alcohol

Product Code: 96016-01, 97AX19, 97AX20, 97C534

Intended Use: Fuel additive

### **COMPANY IDENTIFICATION**

Supplier:

**EXXON MOBIL CORPORATION** 

3225 GALLOWS RD.

FAIRFAX, VA. 22037 USA

24 Hour Health Emergency

609-737-4411

Transportation Emergency Phone

800-424-9300

ExxonMobil Transportation No.

281-834-3296

**MSDS** Requests

713-613-3661 800-662-4525, 800-947-9147

**Product Technical Information** MSDS Internet Address

http://www.exxon.com. http://www.mobil.com

## SECTION 2

## COMPOSITION / INFORMATION ON INGREDIENTS

## Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*			
BENZENE	71-43-2	<= 0.1%			
ETHYL ALCOHOL	64-17-5	95 - 98%			
NATURAL GASOLINE	8006-61-9	2 - 5%			

<sup>\*</sup> All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

## SECTION 3

### HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

## POTENTIAL PHYSICAL / CHEMICAL EFFECTS

Flammable. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an incendiary electrical discharge.

### POTENTIAL HEALTH EFFECTS

Irritating to eyes. May cause cancer. Danger of adverse health effects by prolonged exposure. Repeated exposure may cause skin dryness or cracking. Breathing of high vapor concentrations



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may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. May cause central nervous system depression. High-pressure injection under skin may cause serious damage.

Target Organs: Blood and/or blood-forming organs | Eye |

### **ENVIRONMENTAL HAZARDS**

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID:

Health: 1

Flammability: 3

Reactivity: 0

HMIS Hazard ID:

Health: 1\*

Flammability: 3

Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

## SECTION 4 FIRST AID MEASURES

### INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

### SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

## **EYE CONTACT**

Flush thoroughly with water for at least 15 minutes. Get medical assistance.

### INGESTION

Seek immediate medical attention. Do not induce vomiting.

### NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

## SECTION 5 FIRE FIGHTING MEASURES

### **EXTINGUISHING MEDIA**

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.



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Inappropriate Extinguishing Media: Straight Streams of Water

### FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Extremely Flammable. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Oxides of carbon, Smoke, Fume, Incomplete combustion products, Aldehydes

### FLAMMABILITY PROPERTIES

Flash Point [Method]: -21C (-5F) [ ASTM D-56]

Flammable Limits (Approximate volume % in air): LEL: 3.3 UEL: 19.0

Autoignition Temperature: >365°C (689°F)

# SECTION 6 ACCIDENTAL RELEASE MEASURES

### **NOTIFICATION PROCEDURES**

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

### PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

### SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer. basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Use clean non-sparking tools to collect absorbed material. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

Water Spill: Stop leak if you can do it without risk. Eliminate sources of ignition. If the Flash Point exceeds the Ambient Temperature by 10 degrees C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point



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does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material: however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

## **ENVIRONMENTAL PRECAUTIONS**

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

### SECTION 7

### HANDLING AND STORAGE

### HANDLING

Avoid breathing mists or vapors. Avoid contact with eyes. Use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Use only with adequate ventilation. Do not enter storage areas or confined spaces unless adequately ventilated. Use proper bonding and/or grounding procedures. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source).

Static Accumulator: This material is a static accumulator.

### STORAGE

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Storage containers should be grounded and bonded. Drums must be grounded and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.

### SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### **EXPOSURE LIMIT VALUES**

Exposure limits/standards (Note: Exposure limits are not additive)

Source	Form	Form Limit / Standard			Source
BENZENE		OSHA Action level	0.5 ppm	N/A	OSHA Sp.Reg.
BENZENE		STEL	5 ppm	N/A	OSHA Sp.Reg.
BENZENE		TWA	1 ppm	N/A	OSHA Sp.Reg.
BENZENE		STEL	2.5 ppm	Skin	ACGIH
BENZENE		TWA	0.5 ppm	Skin	ACGIH



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ETHYL ALCOHOL	TWA	1900	1000 ppm	N/A	OSHA Z1
		mg/m3			
ETHYL ALCOHOL	TWA	1000 ppm		N/A	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

### **ENGINEERING CONTROLS**

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

### PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Self-contained breathing apparatus Full face filter respirator

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If prolonged or repeated contact is likely, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

Eye Protection: Chemical goggles are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include: Chemical / oil resistant clothing if contact with material is likely.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.



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**ENVIRONMENTAL CONTROLS** 

See Sections 6, 7, 12, 13.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below.

**GENERAL INFORMATION** 

Physical State: Liquid Color: Colorless Odor: Characteristic Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 0.79

Flash Point [Method]: -21C (-5F) [ ASTM D-56]

Flammable Limits (Approximate volume % in air): LEL: 3.3 UEL: 19.0

Autoignition Temperature: >365°C (689°F) **Boiling Point / Range:** 74C (165F) - 79C (175F)

Vapor Density (Air = 1): 1.6 at 101 kPa

Vapor Pressure: 6.77 kPa (50.9 mm Hg) at 20 C Evaporation Rate (n-butyl acetate = 1): 3.2

pH: N/A

Log Pow (n-Octanol/Water Partition Coefficient): N/D

Solubility in Water: Complete

Viscosity: 1.2 cSt (1.2 mm2/sec) at 40 C Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D Melting Point: N/A

## SECTION 10 STABILITY AND REACTIVITY

**STABILITY:** Material is stable under normal conditions.

CONDITIONS TO AVOID: Heat, sparks, flame, and build up of static electricity.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

# SECTION 11 TOXICOLOGICAL INFORMATION

### **ACUTE TOXICITY**



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Route of Exposure Conclusion / Remarks Inhalation Toxicity: No end point data. Minimally Toxic, Irritation: No end point data. May be irritating to the respiratory tract. The effects are reversible. Ingestion Toxicity: No end point data. Minimally Toxic. Skin Minimally Toxic. Toxicity: No end point data. Negligible irritation to skin at ambient temperatures. Irritation: No end point data. Eye Irritating and will injure eye tissue. Irritation: No end point data.

### **CHRONIC/OTHER EFFECTS**

## For the product itself:

May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatique, mental confusion and blurred vision) and/or damage.

### Contains:

BENZENE: Caused cancer (leukemia), damage to the blood-producing system, and serious blood disorders from prolonged, high exposure based on human epidemiology studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus in laboratory animal studies. ETHANOL: Prolonged or repeated exposure to high concentrations of ethanol vapor or overexposure by ingestion may produce adverse effects to brain, kidney, liver, and reproductive organs, birth defects in offspring, and developmental toxicity in offspring.

Additional information is available by request.

## The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
NATURAL GASOLINE	8006-61-9	5
BENZENE	71-43-2	1, 3, 6

-- REGULATORY LISTS SEARCHED--

1 = NTP CARC

3 = IARC 1

5 = IARC 2B

2 = NTP SUS

4 = IARC 2A

6 = OSHA CARC

## SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

### **ECOTOXICITY**



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Material -- Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

### PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be inherently biodegradable

## SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

## **DISPOSAL RECOMMENDATIONS**

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

## REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY. TCLP (BENZENE)

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, 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.

## SECTION 14 TRANSPORT INFORMATION

### LAND (DOT)

Proper Shipping Name: ETHANOL SOLUTION

Hazard Class & Division: 3

ID Number: 1170 Packing Group: II ERG Number: 127

Label(s): 3

Transport Document Name: ETHANOL SOLUTION, 3, UN1170, PG II

LAND (TDG)



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Proper Shipping Name: ETHANOL SOLUTION

Hazard Class & Division: 3

UN Number: 1170 Packing Group: ||

SEA (IMDG)

Proper Shipping Name: ETHANOL SOLUTION

Hazard Class & Division: 3 EMS Number: F-E, S-D UN Number: 1170 Packing Group: ||

Label(s): 3

Transport Document Name: ETHANOL SOLUTION, 3, UN1170, PG II, (-20.6°C c.c.)

AIR (IATA)

Proper Shipping Name: ETHANOL SOLUTION

Hazard Class & Division: 3

UN Number: 1170 Packing Group: II

Label(s): 3

Transport Document Name: ETHANOL SOLUTION, 3, UN1170, PG II

## SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: TSCA

**EPCRA:** This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: Fire. Immediate Health. Delayed Health.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
BENZENE	71-43-2	<= 0.1%

The Following Ingredients are Cited on the Lists Below:

Chemical Name	CAS Number	List Citations
BENZENE	71-43-2	1, 2, 4, 10, 11, 15, 16, 17, 18, 19
ETHYL ALCOHOL	64-17-5	1, 4, 13, 16, 17, 18, 19
NATURAL GASOLINE	8006-61-9	13, 16, 17, 19

-- REGULATORY LISTS SEARCHED--

1 = ACGIH ALL

6 = TSCA 5a2

11 = CA P65 REPRO

16 = MN RTK

2 = ACGIHA1

7 = TSCA 5e

12 = CA RTK

17 = NJ RTK



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3 = ACGIH A2

8 = TSCA 6

13 = IL RTK

18 = PA RTK

4 = OSHA Z

9 = TSCA 12b

14 = LA RTK

19 = RI RTK

5 = TSCA 4

10 = CA P65 CARC

15 = MI 293

Code key: CARC=Carcinogen: REPRO=Reproductive

# SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

### THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:

Section 05: Fire Fighting Measures - Fire Fighting Instruction was modified.

Section 06: Protective Measures was modified.

Section 06: Notification Procedures - Header was modified.

Section 01: Product Code was modified.

Section 13: Empty Container Warning was modified.

Section 09: Phys/Chem Properties Note was modified.

Section 09: Boiling Point C(F) was modified.

Section 08: Hand Protection was modified.

Section 09: Vapor Pressure was modified.

Section 07: Handling and Storage - Handling was modified.

Section 07: Handling and Storage - Storage Phrases was modified.

Hazard Identification: Health Hazards was modified.

Section 06: Accidental Release - Spill Management - Land was modified.

Section 06: Accidental Release - Spill Management - Water was modified.

Section 09: Relative Density - Header was modified.

Section 09: Flash Point C(F) was modified.

Section 09: Viscosity was modified.

Section 08: Respiratory Protection was modified.

Section 14: EMS Number was modified.

Hazard Identification: Health Hazards was modified.

Section 15: List Citations Table was modified.

Section 11: Tox List Cited Table was modified.

Section 15: List Citation Table - Header was modified.

Section 15: SARA (311/312) REPORTABLE HAZARD CATEGORIES was modified.

Section 06: Accidental Release Measures - Environmental Precautions was modified.

Hazard Identification: Emergency Overview Target Organs was modified.

Section 16: Health Hazards was modified.

Section 16: Precautions was modified.

Section 16: Water Spill was modified.

Section 16: Land Spill was modified.

Section 16: Target Organs was modified.

Section 16: MSN, MAT ID was modified.

Section 06: Notification Procedures was modified.

Section 08: Exposure Limits Table was modified.

Section 11: Chronic Tox - Component was modified.

Section 08: Exposure Limit Values - Header was modified.

Section 01: Company Contact Methods Sorted by Priority was modified.

Hazard Identification: OSHA - May be Hazardous Statement was added.

Hazard Identification: OSHA - Not Hazardous Statement was added.



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Section 16: Disclaimer was deleted.

Hazard Identification: OSHA - Hazards Statement was deleted.

Section 15: TSCA Class 2 Statement was deleted.

### PRECAUTIONARY LABEL TEXT:

WARNING!

## **HEALTH HAZARDS**

Irritating to eyes. May cause cancer. Danger of adverse health effects by prolonged exposure.

Target Organs: Blood and/or blood-forming organs | Eye |

### PHYSICAL HAZARDS

Flammable. Material can accumulate static charges which may cause an incendiary electrical discharge.

### **PRECAUTIONS**

Avoid breathing mists or vapors. Avoid contact with eyes. Use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Use only with adequate ventilation. Do not enter storage areas or confined spaces unless adequately ventilated. Use proper bonding and/or grounding procedures.

### FIRST AID

**Inhalation:** Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

**Eye:** Flush thoroughly with water for at least 15 minutes. Get medical assistance.

**Oral:** Seek immediate medical attention. Do not induce vomiting.

**Skin:** Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

### FIRE FIGHTING MEDIA

Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

## SPILL/LEAK

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Use clean non-sparking tools to collect absorbed material.

**Water Spill:** Stop leak if you can do it without risk. Eliminate sources of ignition. Report spills as required to appropriate authorities. If the Flash Point exceeds the Ambient Temperature by 10 degrees C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use



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booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

Internal Use Only

MHC: 0, 0, 0, 2, 0, 2

PPEC: DVF

DGN: 7007190XUS (1007372)

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