



DATE PREPARED: 11/1/2017

## Section 1. Product and Company Identification

**Product Name** Isopar E

Parchem - fine & specialty chemicals

415 Huguenot Street New Rochelle, NY 10801

**1** (914) 654-6800 **1** (914) 654-6899

parchem.com

info@parchem.com

**EMERGENCY RESPONSE NUMBER** 

CHEMTEL

Toll Free US & Canada: 1 (800) 255-3924 All other Origins: 1 (813) 248-0585

Collect Calls Accepted

Section 2. Hazards Identification

## Classification of the substance or mixture

Flammable liquid: Category 2. Skin irritation: Category 2.

Specific target organ toxicant (central nervous system): Category 3.

Aspiration toxicant: Category 1

## **GHS Label Elements**

**Pictograms:** 



Signal word: DANGER

## Hazard and precautionary statements **Hazard Statements**

H225: Highly flammable liquid and vapor.

H304: May be fatal if swallowed and enters airways.

H315: Causes skin irritation.

H336: May cause drowsiness or dizziness.

## **Precautionary Statements**

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, and lighting equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P261: Avoid breathing mist / vapors.

P264: Wash skin thoroughly after handling.



# Safety Data Sheet

(Isopar E)

DATE PREPARED: 11/1/2017

P271: Use only outdoors or in a well-ventilated area.

P273: Avoid release to the environment.

P280: Wear protective gloves and eye / face protection.

P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P302 + P352: IF ON SKIN: Wash with plenty of soap and water.

P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

P331: Do NOT induce vomiting.

P332 + P313: If skin irritation occurs: Get medical advice/attention.

P362 + P364: Take off contaminated clothing and wash it before reuse.

P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish.

P391: Collect spillage.

P403 + P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

P501: Dispose of contents and container in accordance with local regulations.

#### **Other Hazard Information**

Hazard Not Otherwise Classified (HNOC): None as defined under 29 CFR 1910.1200.

**Physical/Chemical Hazards:** Flammable. Material can accumulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

**Health Hazards:** May be irritating to the eyes, nose, throat, and lungs. May cause central nervous system depression.

**Environmental Hazards:** Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

## NFPA Rating

Health: 2

Flammability: 3 Reactivity: 0

HMIS Rating Health: 2

Flammability: 3 Reactivity: 0





DATE PREPARED: 11/1/2017

#### Section 3. Composition / Information on Ingredients

**Common Name** Isopar E

**Synonym(s)** Isoparaffinic Hydrocarbon

COMPONENT	CAS NUMBER	CONCENTRATION
Naptha (petroleum) light Alkalate	64741-66-8	100%
Isooctane	540-84-1	0.1 - < 0.25%

#### 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. Remove contaminated clothing. Launder contaminated clothing before reuse.

**Eye Contact:** Flush thoroughly with water. If irritation occurs, 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. This light hydrocarbon material, or a component, may be associated with cardiac sensitization following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine. Administration of such substances should be avoided

## Section 5. Firefighting Measures

#### Extinguishing Media

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

Inappropriate Extinguishing Media: Straight Streams of Water

#### **Firefighting**

**Firefighting 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:** Highly 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:** Incomplete combustion products, Oxides of carbon, Smoke, Fume



Safety Data Sheet

(Isopar E)

DATE PREPARED: 11/1/2017

**Flammability Properties** 

Flash Point [Method]: 7°C (45°F) [ASTM D-56]

Flammable Limits (Approximate volume % in air): LEL: 0.9 / UEL: 6.2

**Autoignition Temperature:** 395°C (743°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. 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 firefighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H2S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

#### 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. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. 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. Warn other shipping. 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 booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.



# Safety Data Sheet

(Isopar E)

DATE PREPARED: 11/1/2017

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 contact with skin. Prevent exposure to ignition sources, for example 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. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

**Loading/Unloading Temperature:** [Ambient]

Transport Temperature: [Ambient]
Transport Pressure: [Ambient]

**Static Accumulator:** This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

**Storage:** Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. The container choice, for example storage vessel, may effect static accumulation and dissipation. 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. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.

Storage Temperature: [Ambient]
Storage Pressure: [Ambient]

Suitable Containers/Packing: Tank Cars; Tank Trucks; Drums; Tank Vessel





DATE PREPARED: 11/1/2017

**Suitable Materials and Coatings (Chemical Compatibility):** Carbon Steel; Stainless Steel; Polyethylene; Polypropylene; Polyester; Teflon

**Unsuitable Materials and Coatings:** Natural Rubber; Butyl Rubber; Ethylene-proplyene-diene monomer (EPDM); Polystyrene

Section 8. Exposure Controls / Personal Protection

## **Exposure Limit Values**

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

Substance	Form	Limit/Standard		Note	Source	
Name						
Isooctane		TWA	2350 mg/m <sup>3</sup>	500 ppm	N/A	OSHA Z1
Isooctane		TWA	300 ppm		N/A	ACGIH
Naphtha (petroleum) Light Alkalate	Vapor	RCP- TWA	1200 mg/m <sup>3</sup>	241 ppm	Total Hydrocarbons	Exxon Mobil

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

No biological limits allocated.

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

Adequate ventilation should be provided so that exposure limits are not exceeded. Use explosion-proof ventilation equipment.

**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: Half-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: Chemical resistant gloves are recommended. If





DATE PREPARED: 11/1/2017

contact with forearms is likely wear gauntlet style gloves.

**Eye Protection:** If contact is likely, safety glasses with side shields 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 is recommended.

**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.

**Environmental Controls:** Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

#### Section 9. Physical and Chemical Properties

General Information
Physical State: Liquid

Form: Clear Color: Colorless

**Odor:** Mild Petroleum/Solvent **Odor Threshold:** N/D

Relative Density (at 15.6 °C): 0.723

**Density:** 722 kg/m³ (6.03 lbs/gal, 0.72 kg/dm³)

Flammability (Solid, Gas): N/A

Flash Point [Method]: 7°C (45°F) [ASTM D-56]

Flammable Limits (Approximate volume % in air): LEL: 0.9 / UEL: 6.2

Autoignition Temperature: 395°C (743°F)

**Boiling Point / Range:** 114 - 139°C (237 - 282°F)

**Decomposition Temperature:** N/D **Vapor Density (Air = 1):** 4 at 101 kPa

**Vapor Pressure:** 1.899 kPa (14.24 mm Hg) at 20°C **Evaporation Rate (n-butyl acetate = 1):** 2.08

pH: N/A

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

Solubility in Water: Negligible

**Viscosity:** 0.72 cSt (0.72 mm2/sec) at 40°C | 0.83 cSt (0.83 mm<sup>2</sup>/sec) at 25°C

Oxidizing Properties: See Hazards Identification Section.

Other Information Freezing Point: N/D Melting Point: N/D

Pour Point: -105°C (-157°F) Molecular Weight: 115





DATE PREPARED: 11/1/2017

**Hygroscopic:** No

Coefficient of Thermal Expansion: 0.00085 V/VDEGC

Section 10. Stability and Reactivity

**Reactivity:** See sub-sections below.

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

**Conditions to Avoid:** Avoid heat, sparks, open flames and other ignition sources.

Materials to Avoid: Strong oxidizers

**Hazardous Decomposition Products:** Material does not decompose at ambient temperatures.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

## Section 11. Toxicological Information

Hazard Class	Conclusion / Remarks		
Inhalation			
Acute Toxicity: (Rat) 4 hour(s) LC50 >	Minimally Toxic. Based on test data for the material. Test(s)		
21 mg/l (Vapor)	equivalent or similar to OECD Guideline 403		
Irritation: No end point data for	Negligible hazard at ambient/normal handling		
material.	temperatures.		
Ingestion			
Acute Toxicity (Rat): LD50 > 5000	Minimally Toxic. Based on test data for the material. Test(s)		
mg/kg	equivalent or similar to OECD Guideline 401		
Skin			
Acute Toxicity (Rabbit): LD50 > 2000	Minimally Toxic. Based on test data for the material. Test(s)		
mg/kg	equivalent or similar to OECD Guideline 402		
Skin Corrosion/Irritation: Data	Moderately irritating to skin with prolonged exposure.		
available.	Based on test data for the material. Test(s) equivalent or		
	similar to OECD Guideline 404		
Eye	secially chemicals		
Serious Eye Damage/Irritation: Data	May cause mild, short-lasting discomfort to eyes. Based on		
available.	test data for the material. Test(s) equivalent or similar to		
	OECD Guideline 405		
Sensitization			
Respiratory Sensitization: No end point	Not expected to be a respiratory sensitizer.		
data for material.			
Skin Sensitization: Data available.	Not expected to be a skin sensitizer. Based on test data		
	for the material. Test(s) equivalent or similar to OECD		
	Guideline 406		



DATE PREPARED: 11/1/2017

Aspiration: Data available.	May be fatal if swallowed and enters airways. Based on		
	physico-chemical properties of the material.		
Germ Cell Mutagenicity: Data	Not expected to be a germ cell mutagen. Based on test		
available.	data for the material. Test(s) equivalent or similar to OECD		
	Guideline 471 473 476 478		
Carcinogenicity: No end point data	Not expected to cause cancer.		
for material.			
Reproductive Toxicity: Data	Not expected to be a reproductive toxicant. Based on test		
available.	data for structurally similar materials. Test(s) equivalent or		
	similar to OECD Guideline 414 416		
Lactation: No end point data for	Not expected to cause harm to breast-fed children.		
material.			
Specific Target Organ Toxicity			
(STOT)			
Single Exposure: No end point data for	May cause drowsiness or dizziness.		
material.			
Repeated Exposure: Data available.	Not expected to cause organ damage from prolonged or		
	repeated exposure. Based on test data for the material.		
	Test(s) equivalent or similar to OECD Guideline 413		

#### Other Information

**For the product itself:** Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects.

Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Very high exposure (confined spaces / abuse) to light hydrocarbons may result in abnormal heart rhythm (arrhythmias). Concurrent high stress levels and/or co-exposure to high levels of hydrocarbons (above occupational exposure limits), and to heart-stimulating substances like epinephrine, nasal decongestants, asthma drugs, or cardiovascular drugs may initiate arrhythmias.

#### The following ingredients are cited on the lists below: None.

-REGULATORY LISTS SEARCHED-

1 = NTP CARC 3 = IARC 1 5 = IARC 2B2 = NTP SUS 4 = IARC 2A 6 = OSHA CARC

Section 12. Ecological Information

**Ecotoxicity:** Material - Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.





DATE PREPARED: 11/1/2017

**Mobility:** Material - Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

## **Persistence and Degradability**

Biodegradation: Material - Expected to be inherently biodegradable

**Hydrolysis:** Material - Transformation due to hydrolysis not expected to be significant. **Photolysis:** Material - Transformation due to photolysis not expected to be significant.

Atmospheric Oxidation: Material - Expected to degrade rapidly in air

**Other Ecological Information** 

**VOC (EPA Method 24):** 6.042 lbs/gal

## **Ecological Data**

## **Ecotoxicity**

Test	Duration	Organism Type	Test Results
Aquatic - Chronic	21 day(s)	Daphnia magna	LOEC 0.32 mg/l: data for
Toxicity			similar materials
Aquatic - Acute	72 hour(s)	Pseudokirchneriella	EL50 29 mg/l: data for similar
Toxicity		subcapitata	materials
Aquatic - Acute	96 hour(s)	Oncorhynchus mykiss	LL50 18.4 mg/l: data for the
Toxicity			material
Aquatic - Acute	72 hour(s)	Pseudokirchneriella	NOELR 6.3 mg/l: data for
Toxicity		subcapitata	similar materials
Aquatic - Acute	48 hour(s)	Daphnia magna	EL50 2.4 mg/l: data for similar
Toxicity			materials
Aquatic - Chronic	21 day(s)	Daphnia magna	NOEC 0.17 mg/l: data for
Toxicity			similar materials

## Persistence, Degradability and Bioaccumulation Potential

Media	Test Type	Duration	Test Results
Water	Ready Biodegradability	28 day(s)	Percent Degraded 22

## Section 13. Disposal Considerations

**Waste Treatment Methods:** Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.





DATE PREPARED: 11/1/2017

## Section 14. Transport Information

LAND (DOT)

Proper Shipping Name: Hydrocarbons, Liquid, N.O.S. (Octanes)

**Hazard Class & Division:** 3

ID Number: 3295
Packing Group: ||
Marine Pollutant: Yes
ERG Number: 128

Label(s): 3

Transport Document Name: UN3295, Hydrocarbons, Liquid, N.O.S. (Octanes), 3, PG II,

MARINE POLLUTANT

LAND (TDG)

Proper Shipping Name: Hydrocarbons, Liquid, N.O.S. (Octanes)

**Hazard Class & Division:** 3

UN Number: 3295 Packing Group: ∥ Marine Pollutant: Yes

Footnote: Marine Pollutant designation is applicable only if shipped over water.

SEA (IMDG)

**Proper Shipping Name:** Hydrocarbons, Liquid, N.O.S. (Octanes)

**Hazard Class & Division:** 3

EMS Number: F-E, S-E
UN Number: 3295
Packing Group: ||
Marine Pollutant: Yes

Label(s): 3

Transport Document Name: UN3295, Hydrocarbons, Liquid, N.O.S. (Octanes), 3, PG II, (7°C

c.c.), Marine Pollutant

AIR (IATA)

**Proper Shipping Name:** Hydrocarbons, Liquid, N.O.S. (Octanes)

**Hazard Class & Division:** 3

UN Number: 3295
Packing Group: ||
Label(s) / Mark(s): 3

Transport Document Name: UN3295, Hydrocarbons, Liquid, N.O.S. (Octanes), 3, PG II



DATE PREPARED: 11/1/2017

#### Section 15. Regulatory Information

**OSHA Hazard Communication Standard:** This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

# Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, KECI, PICCS, TCSI, TSCA

**SARA 302:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

**CERCLA:** This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

**CWA/OPA:** This product is classified as an oil under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Act of 1990. Discharge or spills which produce a visible sheen on either surface water, or in waterways/sewers which lead to surface water, must be reported to the National Response Center at 800-424-8802.

SARA (311/312) Reportable Hazard Categories: Fire. Immediate Health.

**SARA (313) Toxic Release Inventory:** This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below: None.

#### -REGULATORY LISTS SEARCHED-

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
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

**Disclaimer:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

**REVISION DATE: 11/1/2017**