

## SECTION 1: Identification

### Product identifiers:

**Product trade name:** ERISYS\* GE-5  
**Company product number:** GE5  
**Other means of identification:** Not Available

### Recommended use of the chemical and restrictions on use:

**Uses:** Epoxy liquid  
**Restrictions on use:** None identified

### Details of the supplier:

**Manufacturer/Supplier:** CVC Thermoset Specialties  
844 N. Lenola Road  
Moorestown, New Jersey 08057  
United States  
Telephone: +1-856-533-3000  
FAX: +1-856-533-3003  
Email: CTS.info@emeraldmaterials.com

**For further information about this SDS:**

### Emergency telephone number:

ChemTel (24 hours): 1-800-255-3924 (USA); +1-813-248-0585 (outside USA);  
1-300-954-583 (Australia); 000-800-100-4086 (India).

## SECTION 2: Hazard(s) identification

### Classification of the substance or mixture:

Flammable Liquid, category 3, H226  
Acute Toxicity, Oral, category 4, H302  
Acute Toxicity, Dermal, category 5, H313  
Skin Sensitizer, category 1, H317  
Acute Toxicity, Inhalation, category 4, H332  
STOT, single exposure, category 3, RT1, H335  
Germ Cell Mutagenicity, category 2, H341  
Carcinogenicity, category 2, H351  
Hazardous to the aquatic environment, Acute, category 3, H402  
Hazardous to the aquatic environment, Chronic, category 3, H412

### Label elements:

#### Hazard pictogram(s):



#### Signal word:

Warning

#### Hazard statements:

H226 Flammable liquid and vapour.  
H302 Harmful if swallowed.  
H313 May be harmful in contact with skin.  
H317 May cause an allergic skin reaction.  
H332 Harmful if inhaled.

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H335 May cause respiratory irritation.  
H341 Suspected of causing genetic defects.  
H351 Suspected of causing cancer.  
H402 Harmful to aquatic life.  
H412 Harmful to aquatic life with long lasting effects.

**Precautionary statements:**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof electrical/ventilating/lighting equipment.  
P242 Use non-sparking tools.  
P243 Take action to prevent static discharges.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312 Call a POISON CENTRE/doctor if you feel unwell.  
P330 Rinse mouth.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P370+P378 In case of fire: Use carbon dioxide, dry chemical, foam to extinguish.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P403+P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local, regional and international regulations.

**Supplemental information:** No Additional Information

Classification and hazards statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Regulations in individual countries/regions may determine which classifications and hazard statements are applicable based on adopted hazard classes and categories. Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Annex III. Regulations in individual countries/regions may determine which statements are required on the product label. See product label for specifics.

**Other hazards:** No Additional Information

See Section 11 for toxicological information.

## SECTION 3: Composition/information on ingredients

**Substance:**

<u>CAS-No.</u>	<u>Chemical Name</u>	<u>Weight%</u>
0002426-08-6	Butyl glycidyl ether	99-100

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

## SECTION 4: First-aid measures

**Description of first aid measures:**

**General:** If irritation or other symptoms occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

**Eye contact:** Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. If eye irritation persists: Get medical advice/attention.

**Skin contact:** Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water

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until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. If skin irritation occurs: Get medical advice/attention.

**Inhalation:** If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a POISON CENTER or doctor/physician if you feel unwell.

**Ingestion:** Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Get medical attention immediately.

**Protection of first aid responders:** Wear proper personal protective clothing and equipment.

**Most important symptoms and effects, both acute and delayed:** Dizziness, Drowsiness, Headache, Irritation, Nausea. Preexisting sensitization, skin and/or respiratory disorders or diseases may be aggravated. See section 11 for additional information.

**Indication of any immediate medical attention and special treatment needed, if necessary:** Treat symptomatically.

## SECTION 5: Fire-fighting measures

### Extinguishing media:

**Suitable:** Use water spray, ABC dry chemical, "alcohol" foam or CO<sub>2</sub>. Use water to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect emergency responders attempting to stop a leak. Water spray may be used to flush spills away from exposures and to dilute spills to nonflammable mixtures.

**Unsuitable:** None known.

### Special hazards arising From the chemical:

**Unusual fire/explosion hazards:** Issue warning: combustible liquid. Eliminate all ignition sources. Ventilate the area. If spill is large, be prepared to isolate the hazard area. Deny access to the spill area to persons who are not involved in the cleanup and/or who have not been properly trained in spill management of hazardous/flammable liquids. Vapors may explode if ignited in an enclosed area. Run off to sewer may cause a fire or explosion hazard. Protect product from flames of any kind; maintain proper clearance when using heat devices, etc. Closed container may rupture (due to build up in pressure) when exposed to extreme heat. Product may burn if an ignition source is present. Gives off volatile vapors that are heavier than air and may travel along the ground or may be moved by ventilation and ignited by flame, sparks, heaters, or other ignition sources at distant locations (flashback potential). May form explosive peroxides.

**Hazardous combustion products:** Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See section 10 (Hazardous decomposition products) for additional information.

**Special protective equipment and precautions for fire-fighters:** Use water/water spray to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures and to dilute spills to non-combustible mixtures. Do not flush combustible liquids into sewer as a fire or vapor explosion hazard may result. Never direct a hose stream directly onto a burning flammable/combustible liquid. Solid or straight hose stream will cause fire to spread if directed onto a burning spill or into an open container of burning liquid. Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

See section 9 for additional information.

## SECTION 6: Accidental release measures

**Personal precautions, protective equipment and emergency procedures:** See Section 8 for recommendations on the use of personal protective equipment. Eliminate ignition sources. Ventilate areas of spill. Personal Protective Equipment must be worn.

**Environmental precautions:** Do not flush liquid into public sewer, water systems or surface waters.

**Methods and materials for containment and cleaning up:** Contain by diking with sand, earth or other non-combustible material. Wear proper personal protective clothing and equipment. Absorb spill with an inert material. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and launder before reuse. Remove all ignition sources, as spilled material may polymerize. Remove leaking containers to a ventilated area.

## SECTION 7: Handling and storage

**Precautions for safe handling:** As with any chemical product, use good laboratory/workplace procedures. Do not cut, puncture, or weld on or near the container. Do not get in eyes, on skin or clothing. Do not breathe dust, vapor, aerosol, mist or gas. Do not ingest, taste, or swallow. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under well-ventilated conditions. Wash contaminated clothing before reuse. Discard shoes contaminated with this product. Provide eyewash fountains and safety showers in the work area. Bond and ground all containers when transferring chemical. Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc.). Use spark-proof tools and equipment. Vapors may travel to distant ignition sources.

**Conditions for safe storage, including any incompatibilities:** Store in combustible storage area and away from heat and open flame. Keep away from heat, sparks and open flames. Store under well-ventilated conditions. Keep container upright, when not in use, to prevent leakage. Avoid storing containers in direct sunlight as vapors may accumulate in the head space creating pressure. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Product can accumulate static charge when handled. Equipment should be grounded. Emptied container may contain residual vapors or liquid which may ignite or explode. Do not reuse empty container without commercial cleaning or reconditioning. Bond and ground all containers when transferring chemical.

## SECTION 8: Exposure controls / personal protection

### Control parameters:

#### Occupational exposure limits (OEL):

<b>Chemical Name</b> Butyl glycidyl ether	<b>ACGIH - TWA/Ceiling</b> 3 ppm TWA (skin) (dermal sensitizer)	<b>ACGIH - STEL</b> N/E		
<b>Chemical Name</b> Butyl glycidyl ether	<b>Australia</b> 25 ppm TWA	<b>New Zealand</b> 25 ppm TWA (sensitizer)	<b>Korea</b> 10 ppm TWA (skin)	<b>Taiwan</b> 25 ppm TWA, 37.5 ppm STEL
<b>Chemical Name</b> Butyl glycidyl ether	<b>Japan ISHL</b> N/E	<b>Japan JSOH</b> 0.25 ppm OEL (Group 2 skin sensitizer)	<b>Indonesia</b> 25 ppm TWA	<b>Malaysia</b> 25 ppm TWA
<b>Chemical Name</b> Butyl glycidyl ether	<b>Philippines</b> 50 ppm TWA	<b>Singapore</b> 25 ppm PEL, 0.1 mg/m <sup>3</sup> STEL		

N/E=Not established (no exposure limits established for the listed substances for listed country/region/organization).

### Exposure controls:

**Appropriate engineering controls:** Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS. Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc.).

### Individual protection measures, such as personal protective equipment:

**Eye/face protection:** Safety glasses or goggles required.

**Skin and body protection:** Wear chemical resistant (impervious) gloves. Wear chemical resistant protective clothing. Use good laboratory/workplace procedures including personal protective clothing: labcoat, safety glasses and protective gloves.

**Respiratory protection:** In case of insufficient ventilation, wear suitable respiratory equipment. Wear an approved respirator (e.g., an organic vapor respirator, a full face air purifying respirator for organic vapors, or a self-contained breathing apparatus) whenever exposure to aerosol, mist, spray, fume or vapor exceed the applicable exposure limit(s) of any chemical substance listed in this SDS.

**Further information:** Eyewash fountains and safety showers are recommended in the work area.

## SECTION 9: Physical and chemical properties

<b>Form:</b>	Liquid	<b>pH:</b>	Not Available
<b>Appearance:</b>	Clear	<b>Relative density:</b>	0.92
<b>Odor:</b>	Aromatic	<b>Partition coefficient (n-octanol/water):</b>	0.63

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<b>Odor threshold:</b>	Not Available	<b>% Volatile by weight:</b>	Not Available
<b>Solubility in water:</b>	Negligible	<b>VOC:</b>	Not Available
<b>Evaporation rate:</b>	Not Available	<b>Boiling point °C:</b>	164 °C
<b>Vapor pressure:</b>	3 mm Hg @ 25°C	<b>Boiling point °F:</b>	327 °F
<b>Vapor density:</b>	Heavier than air	<b>Flash point:</b>	>54 °C (>129 °F) Closed Cup
<b>Viscosity:</b>	2 cps @ 25°C	<b>Auto-ignition temperature:</b>	Not Available
<b>Melting point/Freezing point:</b>	Not Available	<b>Flammability (solid, gas):</b>	Not Applicable (liquid)
<b>Oxidizing properties:</b>	Not oxidizing	<b>Flammability or explosive limits:</b>	<b>LFL/LEL</b> Not Available
<b>Explosive properties:</b>	Not explosive		<b>UFL/UEL</b> Not Available
<b>Decomposition temperature:</b>	Not Available		

**Other information:** Amounts specified are typical and do not represent a specification.

## SECTION 10: Stability and reactivity

**Reactivity:** Exothermic reactions including polymerization may occur in contact with amines, strong acids, strong bases, strong oxidizing agents and excessive heat.

**Chemical stability:** This product is stable.

**Possibility of hazardous reactions:** Hazardous polymerization will not occur. This product will autopolymerize at very high temperatures.

**Conditions to avoid:** Excessive heat and ignition sources.

**Incompatible materials:** Avoid strong acids, bases, and oxidizing agents. Avoid contact with amines.

**Hazardous decomposition products:** Thermal decomposition may produce smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion.

## SECTION 11: Toxicological information

**Information on likely routes of exposure:**

**General:** Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure. BUTYL GLYCIDYL ETHER: May cause chronic health effects involving blood, central nervous system, kidney and liver based on animal data. Limited evidence of a carcinogenic effect. Possible risk of irreversible effects.

**Eyes:** May cause eye irritation.

**Skin:** May be harmful in contact with skin. May cause skin irritation. May cause allergic skin reaction.

**Inhalation:** Harmful if inhaled. May cause respiratory tract irritation.

**Ingestion:** Harmful if swallowed. Ingestion may cause irritation.

**Acute toxicity information:** Harmful if inhaled - Category 4. May be harmful in contact with skin - Category 5. Harmful if swallowed - Category 4.

<u>Chemical Name</u>	<u>Inhalation LC50</u>	<u>Species</u>	<u>Oral LD50</u>	<u>Species</u>	<u>Dermal LD50</u>	<u>Species</u>
Butyl glycidyl ether	1030 ppm (8 hours)	Rat/ adult	1660-2260 mg/kg	Rat/adult	>2150 mg/kg	Rat/ adult

**Skin corrosion/irritation:** Not classified (based on available data, the classification criteria are not met).

<u>Chemical Name</u>	<u>Skin irritation</u>	<u>Species</u>
Butyl glycidyl ether	Mild irritant	Rabbit/ adult

**Serious eye damage/irritation:** Not classified (based on available data, the classification criteria are not met).

<u>Chemical Name</u>	<u>Eye irritation</u>	<u>Species</u>
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**Chemical Name**  
Butyl glycidyl ether

**Eye irritation**  
Mild irritant

**Species**  
Rabbit/ adult

**Respiratory or skin sensitization:** Skin sensitization - Category 1. BUTYL GLYCIDYL ETHER: Dermal sensitization observed in animal testing.

**Chemical Name**  
Butyl glycidyl ether

**Skin sensitisation**  
Sensitizer

**Species**  
Guinea Pig/ adult

**Carcinogenicity:** Suspected of causing cancer - Category 2.

**Germ cell mutagenicity:** Suspected of causing genetic defects - Category 2. BUTYL GLYCIDYL ETHER: Butyl glycidyl ether tested positive in a number of in vitro genetic toxicity assays with and without metabolic activation. Mixed results were observed with the dominant lethal and the mouse micronucleus test.

**Reproductive toxicity:** Not classified. BUTYL GLYCIDYL ETHER: Reproductive toxicity: In an oral (gavage) prenatal development study, effects observed at the highest dose of 250 mg/kg/day were increased post-implantation embryo loss, decreased litter viability and litter weight; NOAEL (no-observed-adverse-effect-level) for embryo/fetal development=100 mg/kg/day; and NOAEL for maternal toxicity=>250 mg/kg/day (no material toxicity noted during study).

**Specific target organ toxicity (STOT) - single exposure:** May cause respiratory irritation - Category 3.

**Specific target organ toxicity (STOT) - repeated exposure:** Not classified. BUTYL GLYCIDYL ETHER: Laboratory animals exposed to the butyl glycidyl ether have shown some evidence of effects on the kidney, liver central nervous system and blood. In a 28-day inhalation study, rats exposed at 188 ppm showed decreased body weight and changes in blood chemistry. Severe irritation of the upper respiratory tract was observed in rats exposed at 94 ppm and 188 ppm. In a chronic toxicity study, male rats exposed at 150 ppm for 50 7-hour exposures demonstrated significantly retarded growth; at 300 ppm doses, there was 50% mortality and additional signs of toxicity including unkept appearance, liver necrosis and significant increase in kidney/body and lung/body weight ratios.

**Aspiration hazard:** Not classified (no relevant information found).

**Other toxicity information:** No additional information available.

## SECTION 12: Ecological information

### Ecotoxicity:

**Chemical Name**  
Butyl glycidyl ether

**Fish 96 hour LC50**  
65 mg/L

**Fish 96 hour LC50**  
N/E

**Fish Chronic NOEC**  
N/E

**Chemical Name**  
Butyl glycidyl ether

**Invertebrates 48 hour EC50**  
N/E

**Invertebrates 24 hour EC50**  
22 mg/L

**Invertebrates Chronic NOEC**  
N/E

**Chemical Name**  
Butyl glycidyl ether

**Algae 96 hour EC50**  
N/E

**Algae 72 hour EC50**  
35 mg/L

**Algae Chronic NOEC**  
N/E

### Persistence and degradability:

**Chemical Name**  
Butyl glycidyl ether

**Biodegradation**  
Not readily biodegradable

### Bioaccumulative potential:

**Chemical Name**  
Butyl glycidyl ether

**Bioconcentration Factor (BCF)**  
N/E

**Log Kow**  
0.63

### Mobility in soil:

**Chemical Name**  
Butyl glycidyl ether

**Mobility in soil (Koc/Kow)**  
N/E

**Other adverse effects:** No additional information available.

## SECTION 13: Disposal considerations

Dispose of unused contents (incineration) in accordance with national and local regulations. Dispose of container in accordance with national and local regulations. Ensure the use of properly authorized waste management companies, where appropriate.

See Section 8 for recommendations on the use of personal protective equipment.

## SECTION 14: Transport information

The information below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions.

**UN number:** UN3271

**UN proper shipping name:**

Ethers, n.o.s. (butyl glycidyl ether)

**Transport hazard class(es):**

**U.S. DOT hazard class:** 3

**Canada TDG hazard class:** 3

**Europe ADR/RID hazard class:** 3

**IMDG Code (ocean) hazard class:** 3

**ICAO/IATA (air) hazard class:** 3

A "N/A" listing for the hazard class indicates the product is not regulated for transport by that regulation.

**Packing group:** III

**Environmental hazards:**

**Marine pollutant:** Not Applicable

**Hazardous substance (USA):** Not Applicable

**Special precautions for user:** Not Applicable

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:**

Not Applicable

**Notes:** For surface shipment within the United States, flammable liquids with a flash point of 100-141 F (38-60 C) may be reclassified: In containers of 119 gallons capacity or less: NOT REGULATED. In containers of more than 119 gallons capacity: COMBUSTIBLE LIQUID.

## SECTION 15: Regulatory information

**Safety, health and environmental regulations specific for the product in question:**

**Japan regulations:**

**Japan Industrial Safety and Health Law:**

Chemical name

Butyl glycidyl ether

Category

Dangerous Substance, Designated carcinogen, Mutagen (new and existing), Notifiable substance, Harmful substance

**Japan Fire Service Law:**

Chemical name

Butyl glycidyl ether

Category

Group 4 - Flammable liquids

**Japan Poisonous and Deleterious Substances:**

Chemical name

No subject chemicals

Category

Threshold

**Japan Prevention of Marine Pollution and Disaster:**

Chemical name

No subject chemicals

Category

**Japan Chemical Substances Control Law:**

Chemical name

No subject chemicals

Category

Notes

**Korean regulations:**

**Korea Industrial Safety and Health Act:**

Chemical name

No subject chemicals

Category

Threshold

**Korea Act on Registration and Evaluation of Chemical Substances (K-REACH) - Substances subject to registration:**

Butyl glycidyl ether

**Korea Chemical Control Act (CCA):**

Chemical name

No subject chemicals

Category

Code

Threshold

**Korea Safety Control of Dangerous Substances Act (MPSS):**

Chemical name

No subject chemicals

Class

Threshold

**Korea Waste Control Act: Waste disposal methods must comply with local and national laws.**

<u>Chemical name</u>	<u>Notes</u>
No subject chemicals	

**Other regulations:** No Additional Information

**Chemical inventories:**

<u>Regulation</u>	<u>Status</u>
Australian Inventory of Chemical Substances (AICS):	Y
Canadian Domestic Substances List (DSL):	Y
Canadian Non-Domestic Substances List (NDSL):	N
China Inventory of Existing Chemical Substances (IECSC):	Y
European EC Inventory (EINECS, ELINCS, NLP):	Y
Japan Existing and New Chemical Substances (ENCS):	Y
Japan Industrial Safety and Health Law (ISHL):	Y
Korean Existing and Evaluated Chemical Substances (KECL):	Y
New Zealand Inventory of Chemicals (NZIoC):	Y
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Y
Taiwan Inventory of Existing Chemicals:	Y
U.S. Toxic Substances Control Act (TSCA):	Y

**Europe REACH (EC) 1907/2006:** Not all applicable components are registered. Please contact your sales representative for further information regarding REACH compliance. REACH is only relevant to substances either manufactured or imported into the EU. REACH information regarding this product is provided for informational purposes only. Each Legal Entity may have differing REACH obligations, depending on their place in the supply chain. For material manufactured outside of the EU, the importer of record must understand and meet their specific obligations under the regulation.

**SECTION 16: Other information**

**Legend:**

- \* : Trademark owned by Emerald Performance Materials, LLC.
- ACGIH: American Conference of Governmental Industrial Hygienists
- N/A: Not Applicable
- N/E: None Established
- STEL: Short Term Exposure Limit
- TWA: Time Weighted Average (exposure for 8-hour workday)

**Users Responsibility/Disclaimer of Liability:**

The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.

Safety Data Sheet Preparer:  
 Product Compliance Department  
 Emerald Performance Materials, LLC  
 1499 SE Tech Center Place, Suite 300  
 Vancouver, WA 98683  
 United States